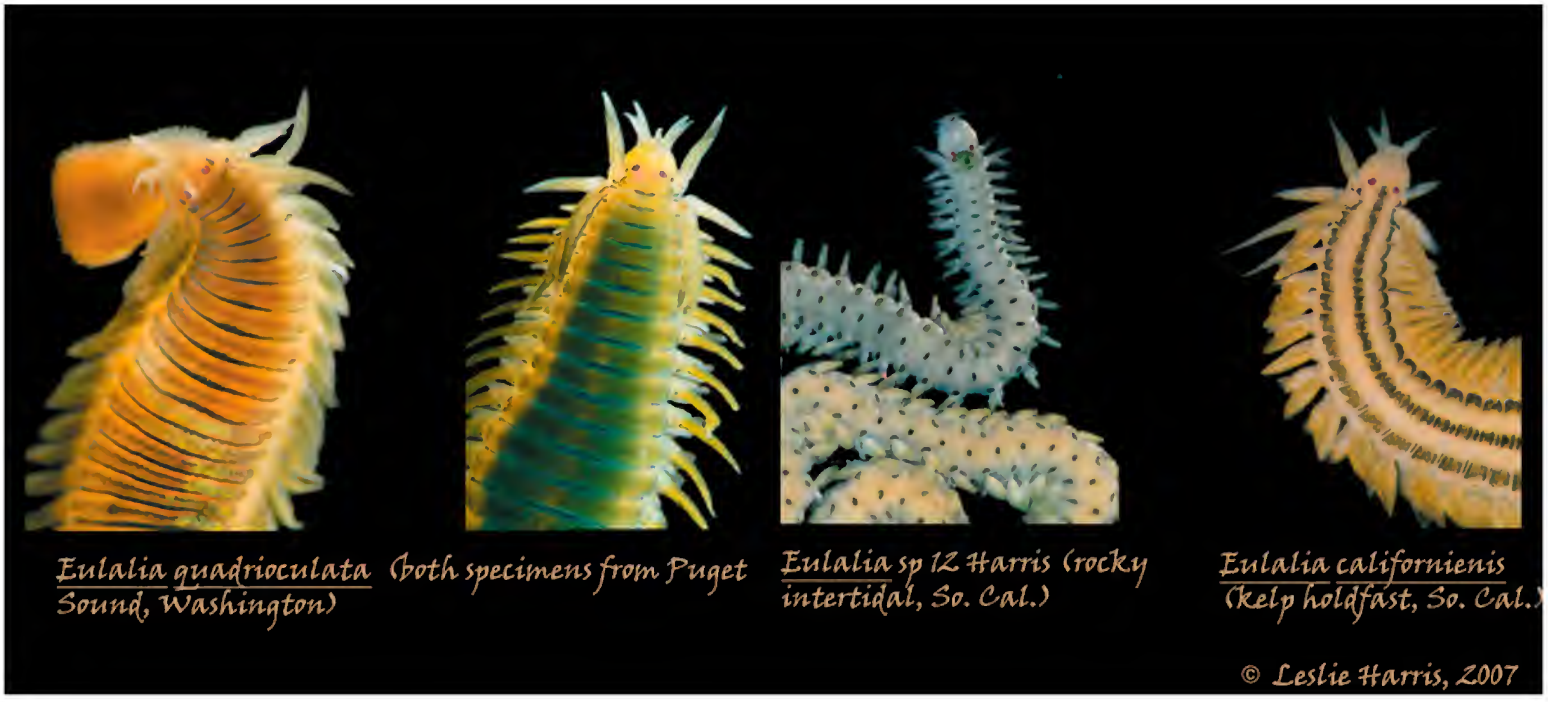
SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

May/June, 2006 SCAMIT Newsletter Vol. 25, No. 1


Eulalia quadrioculata (both specimens from Puget Sound, Washington)
Eulalia sp 12 Harris (rocky intertidal, So. Cal.)
Eulalia californienis (kelp holdfast, So. Cal.)
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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

8 MAY 2006. SCALEWORMS WITH DR. KRISTIAN FAUCHALD

Our guest lecturer for the May SCAMIT meeting was Dr. Kristian Fauchald from the Smithsonian. Years ago Marian Pettibone erected about 21 genera and subgenera of polynoidae. Kristian has recently reviewed the polynoid group and decided there are far fewer taxa. He found descriptions lacking and material in poor condition. He would like to review the type species of everything in the family. He commented that *Lepidonotus* and *Lepidasthenia* were valid, but *Harmothoe* and *Malmgreniella* need to be revised. *Malmgrenia* may be re-erected. Macellicephalids, which occur in deep water, are sometimes benthic and sometimes pelagic. Deep water polynoids erected by Pettibone which have very few segments and small heads will probably all fall into one genus.

Upcoming Meetings

February 12 - Oedicerotids with Dean & Ron at CSD

*March 12 - SCAMIT Invert List ed. 5 review, Polychaetes at LACSD

March 26 - SCAMIT Invert List ed. 5 review, Mollusks and Echinoderms at CSD

*April 9 - SCAMIT Invert List ed. 5 review, Crustacea at LACSD

April 23 - SCAMIT Invert List ed. 5 review, Misc. Phyla at CSD

May 14 - TBA

June 11 - Cirratulids with Rick & Tony at TBA

*There are two meetings planned for both March and April.

Kristian discussed several characters and their taxonomic significance. They are listed below.

Lateral antennae placement is difficult to determine, but the cirratophores are easier to see and are fused underneath the lateral antennae. Kristian doesn't think we need to worry about the distal or subdistal position of antennae.

The facial tubercle is defined poorly or erroneously by most authors. When present, it develops between the palps and below the median antenna in the triangular space and is often very small. Fold back the eversible pharynx to see it easier. Kristian thinks this structure will be an important generic separator in polynoids. He would like to use this only as a phylogenetic character not a diagnostic one.

Jaws are also not used much except when working with deep water polynoids.

Notopodia are simple and sit side by side with the dorsal cirri. The ventral cirri are underneath. There are 2 kinds of notosetae: short, curved and long, erect. They are in short oblique rows behind acicula. A strong character to use is the difference in thickness between the notosetae and the neurosetae.

The pygidium can be terminal or pulled forward between the last two parapodia so that the last segments become V-shaped. This is linked to the placement of the last pair of elytra. The last pair may be muscularized to form a funnel-like structure. Elytra often have pockets to brood embryos. The first 12 pairs of elytra are similar and generally on the same segments on both sides of the body, but the last pair are often on different segments depending on the type of scaleworm. The first pair of elytra are often rounded in shape and some times calcified. If the rest of the

scales have spines then the 1st pair will just have bumps/papillae. When examining scaleworms you need to know which pair of elytra is being described by the author. Approximately half of the scaleworms described have elytra on 2, 4, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 26, 29, and 32. However, those with many segments (32-50) have elytra that get complicated, often switching from odd segments to even. So don't use the elytra patterns on the posterior ends of these longer bodied scaleworms when making identifications.

Pettibone's style was not to update the material she used when she actually published her descriptions. She kept notebooks and files, and some of her notes were over 20 years old by the time she published them. Not all of the features were described for each species. Some of her illustrations didn't match nature. She often drew in what she expected to see rather than what was actually there. In some instances there were multiple species characters in one illustration. Setae are continuously being replaced. Polynoids actually use their parapods to "walk" so their setae get broken off and replaced quickly. Setae can't actually grow but they can be replaced much like shark's teeth.

Halosydna johnsoni and *Halosydna brevisetosa*-
There has been debate over these two species for many years. In the anterior end of these species there are bidentate setae. In some specimens, the bidentate setae are replaced by falcate setae. Some exceptions are smaller, tan, or brown specimens which have bidentate setae throughout the body. We need to look for sexually mature individuals and must use molecular genetics to solve this. Kristian suggested the following protocol: examine parapodium 25; if it has bidentate setae it is *Halosydna johnsoni,* and if it has falcate setae it is *Halosydna brevisetosa.* Ornamentation of elytra may be quite variable in species so this doesn't help in distinguishing them. Micropapillae help to stiffen the elytra and act like Velcro, especially as the worm takes in water posteriorly for circulating. Polygonal reticulation on elytra also helps to stiffen them. Make sure you are looking at the 3 dimensional structures, not just the polygonal reticulation in pigment, as that may describe a different species. Kristian will contact us if he needs to examine any of our local scaleworms.

We spent the afternoon examining specimens that members had brought to the meeting and some that were available from the collections at LACMNH.

The first specimen we examined was *Harmothoe tenebricosa* which is a deep-water species described in Hartman's Atlas.

We then looked at a specimen of *Malmgreniella sanpedroensis* from Orange County (OCSD) that was found in the tube of the terebellid, *Polycirrus* sp. A. Several SCAMIT members have been noticing many of these scaleworms in *Polycirrus* tubes.

Leslie Harris dazzled us all with some of her digital photos of a tropical scaleworm, *Hermenia verruculosa.* The first pair of elytra was unremarkable, but the rest of the elytra along the body resembled small buttons.

Kristian commented that generally scaleworms with complicated, ornamented elytra are free living, and those with elytra that are fairly smooth and have no frills likely live in deep water or are commensal.

We then examined a specimen of *Tenonia priops* from the City of LA provided by Tony Phillips. It had a distinct pigment pattern of spots along the body. The prostomium had squared off peaks.

The anterior pair of eyes sat in a ventral position. The elytra had tiny micropapillae. The median antenna pointed up instead of laterally.

Tony also shared a specimen of *Halosydna* from Ballona Creek at a depth of less than 2 meters. It was found amongst some *Ulva*. It was very tuberculated and had 18 pairs of elytra. He thought it might be *Harmothoe tuberculata* Chamberlin. The tips of the lateral antennae tapered sharply.

Kristian made a good suggestion for the digital photography of specimens; the translucent elastic material that physiologists use for holding down specimens using pins, works very well to position polychaetes for photographing.

Leslie then shared with the group a new species of *Harmothoe* with very inflated and hairy dorsal cirri found in LA Harbor and San Diego Bay. The elytra had different colored spines, some reddish and some brown-black. The edge of the elytra had multi-pronged spines on them.

Leslie also shared digital photographs of a commensal *Arctonoe* from Santa Barbara. This species was found on a *Parastichopus* and had dark circular pigment spots on the elytra. Another commensal, *Arctonoe vitata,* was found inside the mantle of the limpet *Diodora aspera*.

Leslie also had images of *Halosydna brevisetosa* from Santa Barbara. One was orange and had very small macrotubercles on the elytra, and the other had brown pigment with large macrotubercles.

We examined a *Lagisca extennata* with fine papillae all over the lateral antennae and cirri. Other papillae present were sausage-shaped. Kristian mentioned that this genus will most likely stay the same after his review.

LA County Sanitation brought a specimen of *Lepidonotus squamata* to the meeting from old trawl material. The specimen had its jaws extended, which for polynoids are dorso-ventral instead of sideways like other polychaetes. LACSD also had a *Halosydna latior* with very smooth elytra from a 60 meter trawl station.

The San Diego lab contrasted their specimen of *Lepidonotus squamata* which had a very red ventrum.

Kristian made the comment that eyes in scaleworms are sometimes regenerated or out of position. Also, in poorly preserved material the eyes will hardly be visible.

JUNE 12 2006 PHYLLODOCIDS

The meeting was hosted by Leslie Harris in the polychaete collection room at LACMNH. President Kelvin Barwick opened the meeting with a few brief announcements. The Vice-President, Leslie Harris, then announced the upcoming meeting schedule for the rest of the year. With business over, the meeting turned to the topic group of the day, Phyllodocidae, led by Leslie Harris.

Leslie opened the discussion on Phyllodocidae by reviewing some of the taxonomic characters used in their identification. Rick Rowe (CSD) provided a color-coded handout list of Phyllodocidae taxa reported by the City of San Diego with comments on aids to identification. Considerable time was spent discussing Rick's table, which included information on four provisional species. In particular the genus *Eulalia* generated much discussion. By the time we finished with a few of the local species the afternoon was pretty much over, leaving other genera

for a future meeting. For images of some of the species discussed see plates on following pages.

(Additional information on types & other NEP species of *Eulalia*, from Leslie)

- *Eulalia quadrioculata* Moore 1906 and *E. aviculiseta* Hartman 1936.
Banse 1972 synonymized *E. quadrioculata* and *E. aviculiseta*, and Blake (MMS) 1994 followed that synonymy. Leslie previously retained both species because she observed years ago that the type of *E. quadrioculata* (USNM 5516) has what appears to be achaetous parapodial lobes on the second tentacular segment. This structure does not occur in the *E. aviculiseta* types (USNM 20341 & LACM-AHF 0113). Also, the original descriptions indicated that the two species have different pigmentation, something which experience has shown to be a reliable species-level character in other phyllodocids. Moore's 1906 original description reports the preserved type was overall dull olive brown throughout the body, dorsal cirri were brown with a diffuse black spot near the tip, there was a spot of black pigment by each eye, and a minute spot beneath each ventral ganglion. The cotype (ANSP 1982) had a faint dorsal transverse band on each segment. Hartman in 1936 described *E. aviculiseta* with dark to black pigment across the dorsal intersegmental grooves.

At the SCAMIT meeting Leslie showed images of the cotype of *E. quadrioculata* which has faded but definitely has pigment bands across the dorsum midsegmentally and also intersegmentally which are equally dark. Unfortunately, the ventral cirri of those cotype images do not match those of the holotype so the cotype is likely to be another species. The holotype's ventral cirri are asymmetrically conical with a laterally pointed apex; those of the cotype are evenly rounded without an apex. Moore's 1906 figures were of the type and included the parapodium. At the meeting we examined a syntype* of *E. aviculiseta*. The ventral cirri have a rounded margin but with a clear apex directed laterally (triangular), and they match the drawings from the original description by Hartman.

Leslie has noticed in live specimens she attributed to *E. quadrioculata* (complete with lateral pigment spots by the eyes) the intersegmental bands are in the middle third of the dorsum at first and completely span the segment after about setiger 12-15. The intersegmental bands in live specimens with the *E. aviculiseta* pattern completely spanned each segment starting in the tentacular region. Many *Eulalia* specimens from California (Mendocino to Point Loma) collected for the CDFG Introduced Species Survey (ISS) were identified by Leslie and Rick Rowe. These preserved specimens appeared otherwise identical but the pigmentation varied from dorsal transverse midsegmental bands to intersegmental bands to bands in both positions. They possessed lanceolate dorsal cirri (midbody), tentacular cirri, and ventral cirri (triangular) as described for *E. quadrioculata* (and *E. aviculiseta*). After much consideration, all ISS specimens were recorded as *E. quadrioculata*.

- *Eulalia levicornuta* Moore 1909
Leslie feels that this species has always been well defined. A small, narrow species, it has rounded dorsal cirri and relatively large symmetrical ventral cirri. It is usually tan with small scattered darker brown spots on the dorsum and cirri; all or just outer margins of the cirri are dark brown. Recently Blake (MMS volume 4, 1994) provided a very nice illustration. Unfortunately, like

* The accompanying image is incorrectly labeled as holotype. Hartman (1936) stated that the holotype was in the USNM. The lot she deposited has 2 specimens which are listed as "type" in the USNM catalogue as is LACM-AHF 113 in her personal catalogue. In the absence of evidence showing which specimen she intended to be the holotype the LACM worm section considers all of these to be syntypes.

E. quadrioculata, the holotype (USNM 17288) and one of the cotypes seem to be different species. Leslie examined the type back in 1987 and more recently reviewed the cotypes. That cotype (ANSP 2869) possesses short, triangular dorsal cirri with rounded tips and small, narrowly triangular ventral cirri. A second cotype (ANSP 2870) does match the type.

Other species seem to have been confused with *E. levicornuta*. Several problematic taxa have been noted by LACSD and CSD in recent years. Tom Parker erected the provisional taxa, *Eulalia* sp LA1, during Bight '98 for animals that did not have any dorsal pigment spots. Additional specimens since then have shown additional variability in dorsal pigment patterning and expression. Larry Lovell, now at LACSD, reviewed a large number of *Eulalia* sp LA1 for the meeting and could not establish a clear pattern for dorsal pigmentation. Three specimens of *Eulalia* sp LA1 from different stations were pulled, photographed, and projected for the group to see. The first specimen (LACSD 0701-10B) possessed a middorsal pigment spot anterior to the intersegmental groove, a smaller lighter pigment spot is on the dorsal midsegmental area, the dorsal cirri have central darker pigment, and there is a ventral spot of pigment at the base of the ventral cirri. Dorsal cirri and ventral cirri are similar to *E. levicornuta sensu stricto* in mid-body regions but elongate posteriorly. Ventral cirri of the holotype elongate in the median region then decrease in the posterior. Leslie commented that it was neither *E. levicornuta* nor one of her provisionals and should be described as a SCAMIT provisional. The second and third specimens (LACSD 9401-1A and 0794-7B) possessed light lateral triangles of pigment on the dorsum of each segment and a darker spot of pigment middorsally just anterior to the intersegmental grooves and the dorsal cirri had spots; there were no ventral spots at parapodial bases. Leslie commented that these specimens matched her *Eulalia* sp NAMIT 4 from the Puget Sound area. Leslie and Larry will be re-examining these specimens in the future.

Next Rick Rowe, CSD, pulled specimens of two CSD *Eulalia* provisionals. *Eulalia* sp SD1 (SBOO-I23 rep 1, 14JUL05, 20 m) possessed a weak mid-dorsal spot in a few anterior segments and was diffusely pigmented otherwise. Leslie commented that she would call it *E.* cf. *levicornuta*. *Eulalia* sp SD3 (regional station 2038 rep 1, 06JUL05, 53 m) was a small greenish specimen with eyes and a heavily mottled dorsum. Leslie commented that this was different and should stand as a separate provisional.

With images of *Eulalia* dancing in our heads, the group broke for lunch.

When we returned from lunch the group was in for more fun. Further illustrating the problems with *Eulalia*, Leslie discussed several provisional species that she has encountered in the Pacific Northwest. She has 15 provisional taxa that she has been tracking for several years. Her *Eulalia* sp 11 and *E.*sp 12 are just two of the species that have been mis-identified as *E. bilineata* along this coast. In her review of North American "*E. bilineata*" specimens from British Columbia to Mexico she found six species, only one of which was described. None were *E. bilineata*. The sole described species was *Eulalia californiensis* (Hartman 1936) which has three dark lines running down the body. The median line is variable in intensity and may disappear completely when the animal is preserved leading to confusion with *E. bilineata*, which as the name suggests, has two dark midlateral lines running down the body. Leslie then wowed us with live color images of these & other phyllodocids from various parts of the world for the rest of the afternoon.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

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Back issues of the newsletter are available. Prices are as follows:

Volumes 1 - 4 (compilation)	$ 30.00
Volumes 5 - 7 (compilation)	$ 15.00
Volumes 8 - 15	$ 20.00/vol.

Single back issues are also available at cost.

The SCAMIT newsletter is published every two months and is distributed freely through the web site at www.scamit.org. Membership is $15 for the electronic copy available via the web site and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All new members receive a printed copy of the most current edition of "A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates … in the Southern California Bight." The current edition, the fourth, contains 2,067 species with partial synonyms. All correspondences can be sent to the Secretary at the email address above or to:

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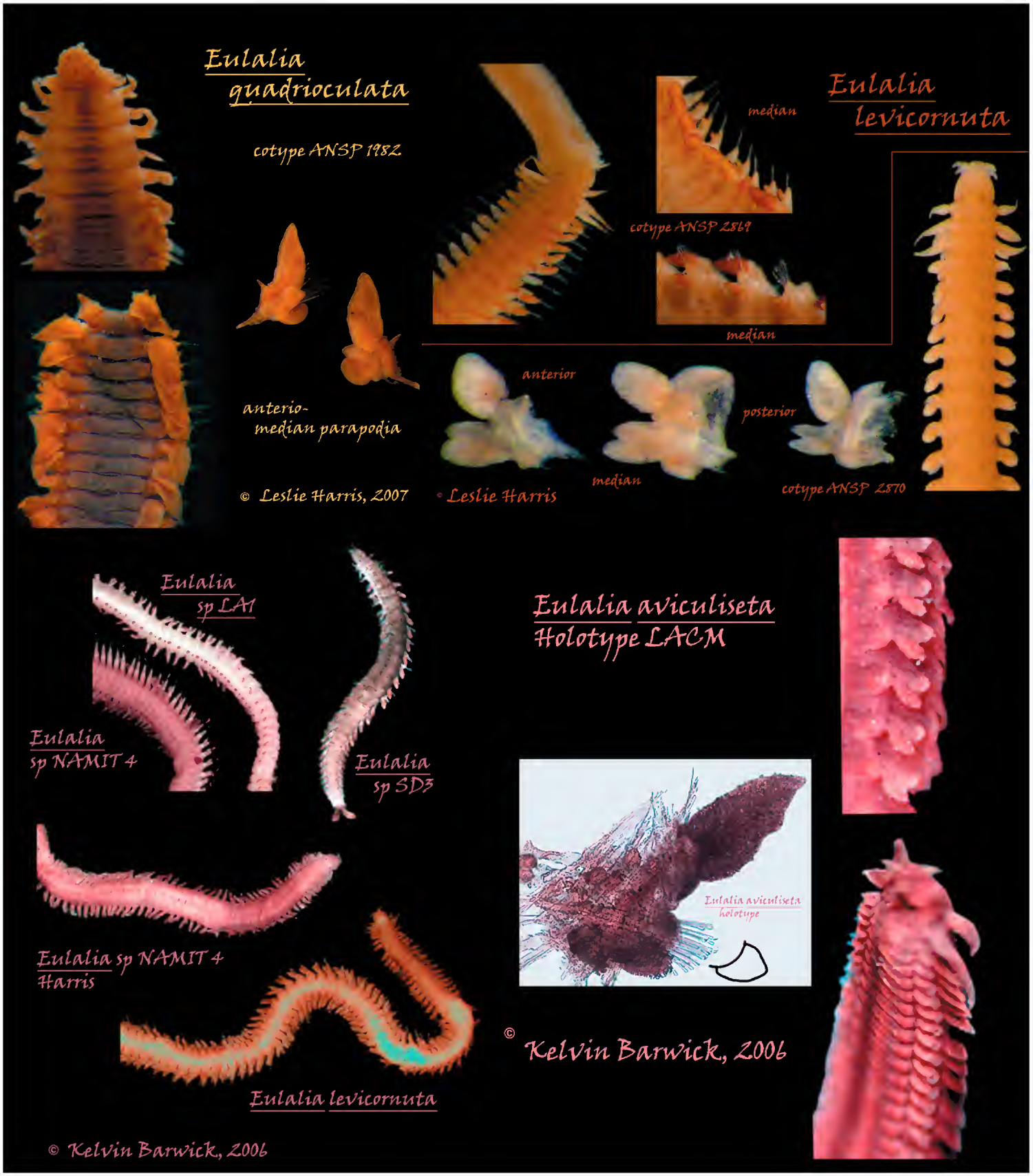
Eulalia quadrioculata
cotype ANSP 1982
anterio-median parapodia
© Leslie Harris, 2007
Eulalia levicornuta
median
cotype ANSP 2869
median
anterior
posterior
median
© Leslie Harris
cotype ANSP 2870
Eulalia sp LA1
Eulalia sp NAMIT 4
Eulalia sp SD3
Eulalia aviculiseta Holotype LACM
Eulalia aviculiseta holotype
Eulalia sp NAMIT 4 Harris
© Kelvin Barwick, 2006
Eulalia levicornuta
© Kelvin Barwick, 2006

Eulalia sp 11 Harris
(dock fouling, Friday
Harbor, Washington)
Eulalia aviculiseta
color pattern
(dock fouling, Friday
Harbor, Washington)
© Leslie Harris, 2007
Eulalia quadrioculata
Sound, Washington)
(both specimens from Puget
Eulalia californiensis
(kelp holdfast, So. Cal.)
© Leslie Harris, 2007
Eulalia sp 12 Harris (rocky
intertidal, So. Cal.)

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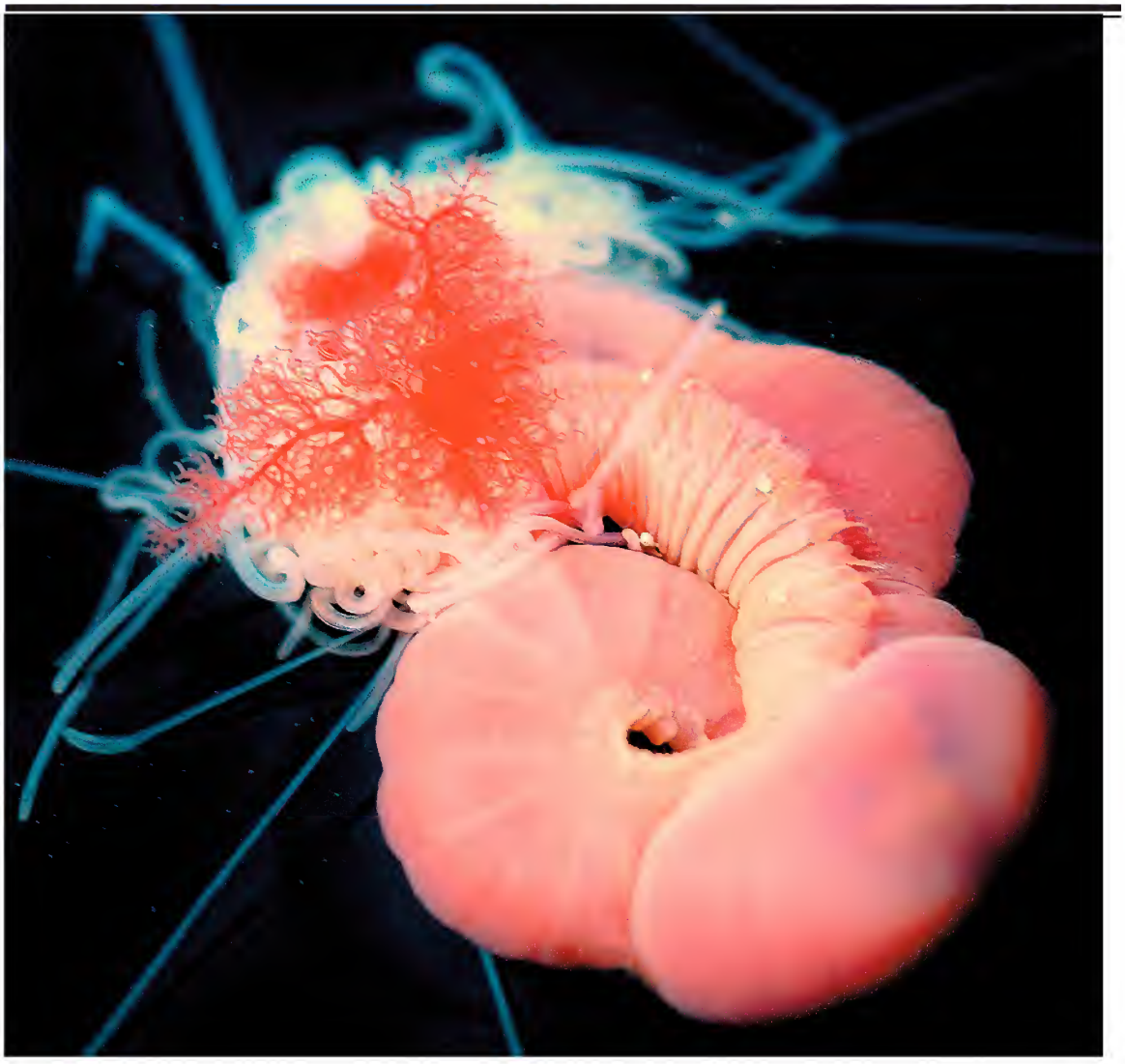

Amphitrite robusta Johnson 1901 from CSD trawl SD8 9Feb2007 99m. Collected by K. Barwick Imaged and Identified by R. Rowe.
The specimen is 7 mm maximum width preserved and is full of developing gametes. In the tube with the worm was a specimen of ***Lepidasthenia longicirrata*** Berkeley 1923.
Please see the attached sheet at the end of the Newsletter for more information on this species.

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TEREBELLIDS – JULY 10 2006

The meeting on Terebellids was led by Leslie Harris and was held at the Los Angeles County Museum polychaete collections room. President Kelvin Barwick opened the meeting. Leslie announced upcoming meetings which are listed on the SCAMIT website and below.

Treasurer Cheryl Brantley called for a meeting to update the SCAMIT Species List and prepare for the next edition. There was some discussion about how much this meeting should include. Will Edition 5 be more inclusive? Will it contain provisionals? Will it include other surveys? It was decided to have a series of four meetings to cover all the taxa for the Species List update. The polychaetes will be addressed on March 12, 2007 at the Los Angeles County Sanitation District. The mollusks and echinoderms will be covered on March 26, 2007 at the City of San Diego. The crustaceans will be addressed on April 9, 2007 at the Los Angeles County Sanitation District. The miscellaneous phyla will be reviewed on April 23, 2007 at the City of San Diego.

Upcoming Meetings

*March 12 - SCAMIT Invert List ed. 5 review, Polychaetes at LACSD

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Leslie then started on the topic of the morning, problems with *Pista*. Leslie has examined most of the type specimens of species of *Pista* that occur in the Northeast Pacific Ocean. She has categorized the species into two distinct groups. The first group is *Pista cristata* sensu stricto, the "classic *cristata*". Species in this group have two pairs of branchiae and three pairs of nephridia. The second group is represented by *Betapista dekkerae* holotype which has three pairs of branchiae and multiple pairs of nephridia. Banse's specimen was aberrant in which the branchiae start on segment 2, but he described it as starting on segment 3 which places it back into *Pista*.

Leslie went on to compare different character states of these two species groups such as the shape of uncini and ventral shield structure. Leslie believes that *Betapista* is a good name. Specimens are characterized by 3 pairs of branchiae, starting on segment 2, multiple pairs of nephridia, uncini with a large hook on a long shaft, and heavily crenulated and convoluted ventral shields. Under this scheme, *Pista elongata*, *P. dekkerae*, *P. moorei*, and *P. pacifica* would move into *Betapista*.

Leslie explained that *P. agassizi* should change to *P. brevibranchiata* Moore 1923 and that it agreed with ICZN 1999 in using the first available name. The holotype of *P. agassizi* is Mendocino, California. Leslie has come across specimens recently while working on an outer coast survey. *P. agassizi* is a good species and lives in the intertidal and subtidal on hard bottom habitats. In comparison, *P. brevibranchiata* lives in soft bottom habitats, has thicker, more rigid tubes, has thousands of small eggs, and has a different staining pattern of the ventral shields and

dorsum.

Leslie presented a list of the current species of *Pista* and their status based on her recent research:

P. agassizi – goes to *P. brevibranchiata* Moore 1923
P. alata – valid
P. bansei – goes to *P. estevanica*
P. brevibranchia – goes to *P. brevibranchiata* Moore 1923
P. cristata – not on this coast
P. disjuncta – still in question
P. elongata – Group 2 *elongata*
P. estevanica – valid
P. fasciata - ?? type specimen in poor shape
P. moorei - goes to Group 2 *moorei*
P. pacifica – goes to Group 2 *pacifica*
P. percyi – goes to *P. brevibranchiata*
P. wui – valid
Betapista dekkerae - valid

After lunch, we viewed many specimens under the microscope. First up was *Pista* sp SF 1 from San Francisco Bay collected by Dot Norris. This specimen had dorsal staining only on setiger 1, branchiae with brown pigment, and eyes. Leslie offered to send an e-mail to the SCAMIT list-server with an attachment of the image.

Next up was *Nicolea* sp A Harris 1985. There is a voucher sheet for this species in the SCAMIT newsletter Volume 4 No. 11, 1985. Rick Rowe (CSD) also showed us his photo sheet for this species. Leslie showed us a chart of described species of *Nicolea*. The genus needs to be revised because several of the characters used to separate the species are not good, such as the number of teeth above the main fang, number of denticles, and size of nephridial pores. Leslie has only found *Nicolea* in harbors and suggested that it may be introduced. We viewed a specimen of *Nicolea* sp A and observed the nephridial papillae on segments 3, 6, and 7.

Kelvin then showed us a specimen of *Lysilla* sp SD 1 Barwick 2006 collected from San Diego Point Loma outfall station E-5(2) in 99 meters of water. It has 6 pairs of thoracic notopodia with simple capillaries that do not project out from the individual podia. The tentacular lobe is expanded. The inflated lower lip has longitudinal groves. The thorax is papillated as well as annulated whereas the abdomen is only annulated. Only one incomplete specimen was found.

In the eastern Pacific, *Lysilla loveni* Malmgren, 1866 has been reported from British Columbia and Washington (Banse, 1980). The type is from Sweden and has also been reported from Greenland, Iceland, the Bering and Chukchi Seas, and the Canadian Arctic (Holthe, 1986). It is similar to *L.* sp SD1 in that it also has 6 pairs of thoracic notopodia. Holthe describes *L. loveni* having a gutter like lower lip and short oral tentacles. *L.* sp SD1 has an expanded lower lip with longitudinal groves and the oral tentacles are longer. Ushakov (1955) illustrates the anterior thorax of *L. loveni* as inflated to over twice the diameter of the following posterior segments. The thorax of *L.* sp SD1 is only slightly more inflated that the posterior segments.

Leslie had brought a new polycirrinae, *Amaeana* sp A Harris 2004. It was collected from soft bottoms in San Francisco Bay. The specimen had large nephridial papillae and the posterior was striped like a “tiger tail”. Some specimens also had less intense striping in the anterior. Leslie told

us that this animal produces blue bioluminescent slime.

Discussed next was *Polycirrus californicus* and *P. perplexus* Moore 1923. These two species are found in different habitats; *P. californicus* is found in soft bottoms and *P. perplexus* is found on kelp holdfasts and scrapings from hard substrates. Rick showed us pictures of the staining patterns of these species which are distinct. We viewed a specimen of *P. perplexus* of Leslie's from shallow water scrapings. The dorsum is rugose and there is a light methyl green staining ventral peristomial patch. In addition there are approximately 3 segments where the middle ventral scutes stain lighter than the nearby scutes.

Larry Lovell handed out copies of a table that he made comparing which characters have been used for *Polycirrus* by various authors. A copy of the table is included with this newsletter. We discussed the characters and commented on which ones were best to use in identifying species of *Polycirrus*. There was a discussion about regenerating heads. When *Polycirrus* are stressed or about to be eaten, they often lose their tentacles and head which serve as a distraction and allow the rest of the animal to escape. Therefore, we often get specimens with regenerating anterior ends and consequently the number of thoracic setigers can be variable. We concluded that this is not a good character to use in species determination.

Images of several provisional *Polycirrus* species were passed around including *P.* sp OC1, *P.* sp SD1, *P.* sp SD2, and *P.* SD3.

Moving from Terebellids to Spionids we next viewed a specimen of *Polydora hoplura* that Leslie had recently identified from a San Diego Bay sample. It normally occurs on the East Coast. Klapare described *P. hoplura* from Europe. The anterior end looks remarkably like *Bocardiella* with pigment on both sides of the prostomium. There were no branchiae on the 5th setiger, and the spines on the 5th were simple. Unlike *Bocardiella* though, *P. hoplura* has large spines in the posterior.

Lastly, we examined the holotype of *Cirratulus dillonensis*.

DECIPHERING *PINNIXA* AND GNATHIDS; AUGUST 14, 2006

Bill Furlong and I were happy to host the August 14, 2006 SCAMIT meeting at LACSD touching on two large topics, the crab genus *Pinnixa* and the isopod family Gnathiidae. We started off the meeting discussing several new species of gnathiid isopods and reviewing the characters that distinguished them as separate from other known taxa in our region. In the March/April SCAMIT newsletter I published a large manuscript on gnathiid isopods, covering re-descriptions of well-known taxa and providing detailed descriptions of new species encountered. Additionally, I provided keys to both males and females along with digital images for all taxa described. In this research effort, it was my intention to find a reliable way to link previously unidentified females with readily identified males. At the SCAMIT meeting, I presented a PowerPoint presentation outlining the methodology I propose using to accomplish this. That presentation can be found, along with character tables and keys, under the Taxonomic Tools section of the SCAMIT webpage. Since the material had been published before the August meeting, taxonomists from outside LACSD were able to review that work and provide valuable feedback at the meeting. I believe I convinced people that linking males with females is indeed possible and it is my hope that SCAMIT members will test out the methodology proposed and let me know how it worked for them. For more information on gnathiid isopods and their associated taxonomic tools, please refer to the March/April newsletter (Volume 24, No. 6) and the SCAMIT webpage.

After a tasty Thai lunch, Bill Furlong dove into the continually confusing problem of distinguishing *Pinnixa occidentalis* from *Pinnixa scamit*. We have had several meetings on this subject over the last three years without much resolution. Bill presented a Power Point presentation that will also be posted under the Taxonomic Tools section of the SCAMIT webpage for the reader's reference. Our three-year investigation of *Pinnixa* started simply as a discussion regarding the validity of the species *Pinnixa scamit*. Taxonomists from some agencies clearly saw this as a valid species while others did not recognize it at all. This created inconsistency in the previous Bight '03 effort and we had hoped to find some resolution to this controversy by sitting down and investigating the concerns of various taxonomists in regards to the two species. In using the published keys to separate the two species, many agencies noticed that smaller individuals were typically identified as *P. scamit* and larger ones as *P. occidentalis*. So the obvious question came to be: Is *P. scamit* just representative of juvenile *P. occidentalis* specimens? After sitting down and looking at many samples, we realized that this question could not be answered morphologically.

I reached out to a molecular geneticist postdoc, Scott Harrison, working at SCRIPPS, who had previous experience with this troublesome group of crabs on the east coast and had success in discriminating among closely related species in that region. Scott agreed to take on our cause in his spare time and with his own funding, which was truly amazing and generous. LA City, LA County, and City of San Diego all submitted representative formalin fixed specimens of what we each believed to be either *P. scamit* or *P. occidentalis*. The formalin fixation procedure unfortunately fragments the DNA of most animals, meaning that much smaller fragments of gene sequences are extractable from each specimen. Scott, with some perseverance, was successful though in obtaining usable sequences from each specimen submitted and when using mitochondrial Cytochrome B found there to be no significant difference in gene divergence between the individuals submitted. Scott presented these results at a former SCAMIT meeting but stated that these sequences were really too small (200 or so base pairs, compared to 500-600 typically analyzed in most studies) and wanted to see if he could find a better primer set and methodology for extracting DNA from formalin fixed material. He also pointed out that Cytochrome B was typically a better tool for demonstrating differences in species that had been well separated for a good deal of time. This gene did not typically work well for distinguishing species that were recently diverged or diverging. He suggested that further genetic work would need to be done before a real decision could be made on the group. Other genes, such as Cytochrome Oxidase Subunit One (CO1, a mitochondrial gene), Internal Transcribed Spacer Region – 1 (ITS-1, a nuclear gene), and 12Sr another mitochondrial gene, were all more appropriate for investigating gene distinctions in recently evolving species. Scott, however, did not have the time or money to take our study to this next level.

The following year, Bill Furlong began doing some more investigative work and found aberrant males mixed in with the LACSD *P. occidentalis* lots. These males had chelae that were much more like females of *P. occidentalis* and not at all typical of a male *P. occidentalis*. He also noted that the morphology of the folded abdomen was more rounded in these aberrant males than the typical *Pinnixa* male configuration. He began to wonder if we had a feminized male. This certainly piqued our interest and I began plucking penes from various males in the lot. What I found was striking differences in size and structure between a typical *P. occidentalis* male and the aberrant males. The aberrant male penes were twice the size in length and width of the typical *P. occidentalis* male. Certainly not feminized……just the opposite, but unfortunately creating much more confusion.

I began discussing this issue with Dr. Peter Castro from California State Polytechnic University in Pomona, who is having similar issues with goneplacid crabs, though his problem seems even more complicated. Whereas we show slight morphological variation in chelae and carapace morphology, Castro says the only morphological distinctions he finds are in the pene structures themselves. Just like us, he can identify aberrant males based on pene morphology but could not associate the corresponding females. He has noticed however that the vulva of goneplacids show many different patterns, but nothing that will allow him to link them to corresponding males. This has created a similar situation that was found in the gnathiid isopod group where only males could be identified and females were left as unidentified/sp. Although genetics may be helpful in understanding this problem, it would not help the taxonomists who rely on morphological features/distinctions to make identifications. Molecular lab set ups are still out of reach for most of us in our tool sets at the monitoring agencies.

We did send the aberrant male specimens that Bill found to Scott Harrison and he again ran with a Cytochrome B gene and still found no significant difference in base pairs between these and the other specimens that he ran earlier. But again, he thinks that these are possibly recently diverged species and Cytochromee B is not the best gene to differentiate at the level we need. This has been further demonstrated by the recent paper published by Ernesto Campos: "Systematics of the genus *Scleroplax* Rathbun, 1893 (Crustacea: Brachyura: Pinnotheridae)" wherein Ernesto provides a re-diagnosis of the monotypic genus *Scleroplax* based on morphology. While Scott was at SCRIPPS, he also ran Cytochromee B on *Scleroplax* specimens from Southern California and again found no distinct differences between the genera *Scleroplax* and *Pinnixa*. This is likely due to the fact that Cytochrome B is more often used in mammalian studies and may not be the best method for distinguishing fine level differences/divergences in crustaceans.

Scott has since moved on and taken a permanent faculty position back east. Our questions about the group remain unresolved and more complicated than when we initially started. We have three forms now that cannot be easily distinguished and lack the appropriate genetic analyses to make a real decision. It was therefore the recommendation of SCAMIT members attending the meeting, to refer to *Pinnixa occidentalis* as a complex of several unresolved species and incorporate *Pinnixa scamit* into that mix (not recognizing it as a separate species). Species complexes within the Pinnotheridae family are not uncommon and found around the world. There is the *Pinnixa cristat*a complex in the western Atlantic and a *Disodactylus* species complex known from both the Atlantic and Gulf of California. Scott Harrison remains interested in this project and we hope to entice one of his graduate students to pursue this question further with one of the three genes mentioned above (CO1, ITS-1, and/or 12Sr). Please find the Power Point that Bill Furlong gave on *Pinnixa* as a supplement to this newsletter, along with a review of the three morphologies we have documented in the *Pinnixa occidentalis* CMPLX.

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Please visit the SCAMIT Website at: www.scamit.org

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Back issues of the newsletter are available. Prices are as follows:

Volumes 1 - 4 (compilation)	$ 30.00
Volumes 5 - 7 (compilation)	$ 15.00
Volumes 8 - 15	$ 20.00/vol.

Single back issues are also available at cost.

The SCAMIT newsletter is published every two months and is distributed freely through the web site at www.scamit.org. Membership is $15 for the electronic copy available via the web site and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All new members receive a printed copy of the most current edition of "A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates … in the Southern California Bight." The current edition, the fourth, contains 2,067 species with partial synonyms. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
C/O The Natural History Museum, Invertebrate Zoology
attn: Leslie Harris
900 Exposition Boulevard
Los Angeles, California, 90007

Source	# pairs of notopodia (gross diff)	Segment with 1st notosetae (2 or 3)	1st setiger with uncini (range)	Dorsum (smooth or rugose)	Number & form of ventral pads	Form of notosetae (plumose, hirsute)	Form of uncini and range of dentition	Thoracic parapodial lobes (presence pre- & postsetal lobes, length)	Frontal view uncini dentition	# of nephridia	Methyl green staining patterns
Hutchings & Glasby 1986	yes *	*not listed among most important diagnostic characters but useful*	yes **	yes	yes	yes	yes	*highly variable, not reliable*	*not used, highly variable*	*Use with caution, size and maturity dependent*	*not mentioned*
Banse, 1980	yes		*no*	*no*	yes	yes	yes	yes	yes	yes	*not mentioned*
Lovell 1995 (Puget Sound handout)	yes		yes	yes	yes	yes	*no*	yes	*no*	*no*	yes
Barwick 2003 (SCAMIT handout)	yes		yes	yes	yes	yes	yes	*no*	*no*	*no*	*no*
Parker - key derived from Barwick's table	yes		yes	yes	yes	yes	*no*	*no*	*no*	*no*	*no*
Harris 2006 (SCAMIT meeting talk)	yes	yes	yes	yes	yes	yes	not used, other characters preferred	*no*	not used, other characters preferred	yes	yes

* "the absolute # of pairs tends to decrease with increasing body size"
** "absolute # of uncini per row tends to increase with body size"

Amphitrite robusta Johnson 1901 070212RCR

City of San Diego Regional 2121 8/17/2006 84m. Large, entire specimen in RCRpersColl
City of San Diego Trawl SD8 2/9/2007 99 m. Single large (7 mm max. width) specimen imaged live in RCRpersColl

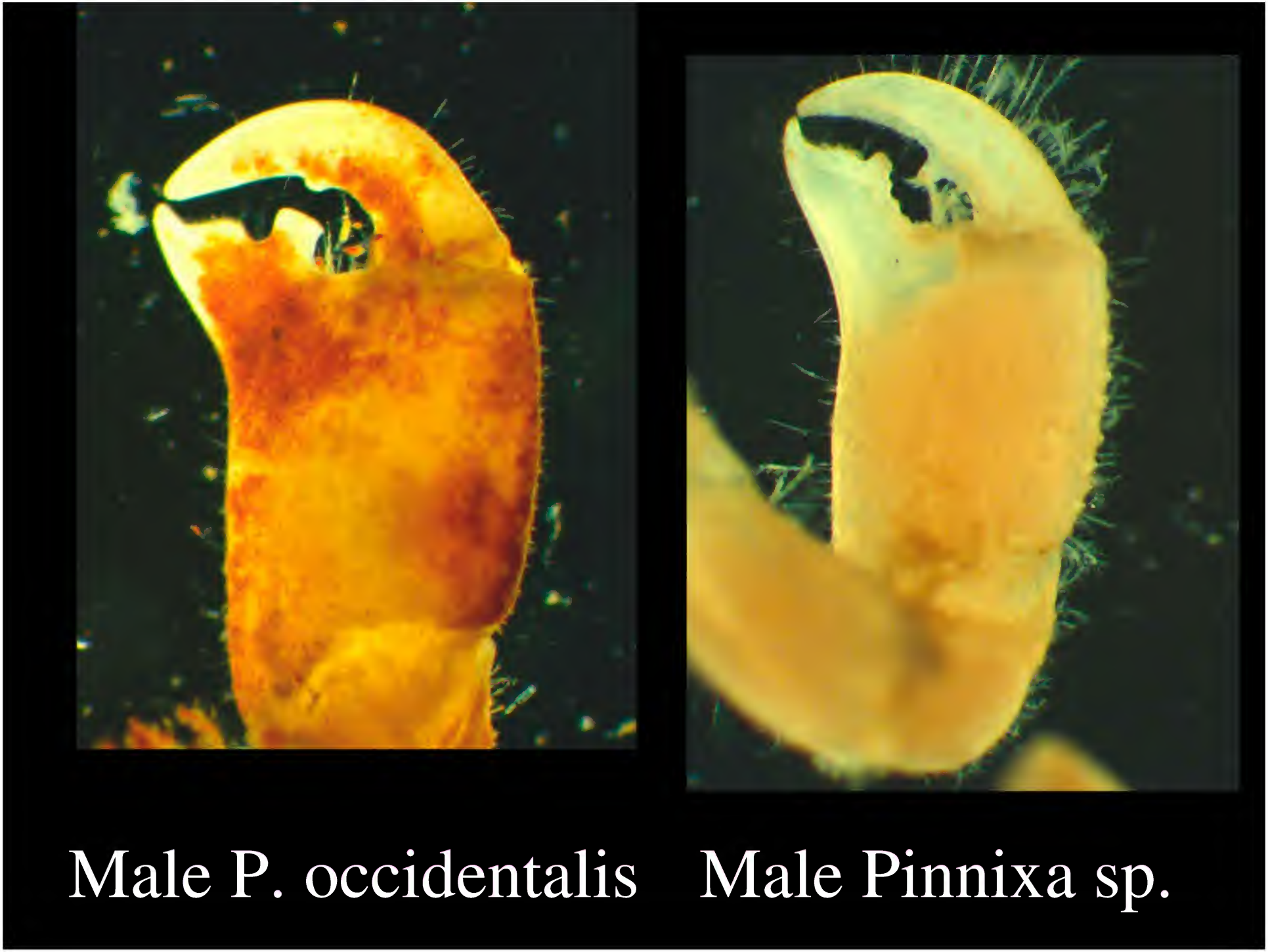
SCAMIT recognizes the synonymy of *Neoamphitrite* with *Amphitrite* by Hutchings & Glasby 1988. That synonymy is also cited in Table 4 page 494 of Hutchings 1997, The Terebellidae from the Wallabi Group.

Harris, in a preliminary description of Neoamphitrite sp SFA 2K (personal email comm. to D. Norris and R. Rowe), noted that she was going to place her San Francisco Bay provisional species in *Terebella* (because of its 41-43 setigers), but that Glasby (pers. comm. to Harris) felt that the presence of lateral lappets were far more significant at the generic level than the setiger count.

Should the Harris provisional species from San Francisco Bay and locally reported species Amphitritnae sp. SD1 of Barwick 1999 (note that the subfamily name is misspelled on that voucher sheet, and that the period after "sp" violates SCAMIT naming conventions) be considered species of *Amphitrite* sensu stricto? The Harris and Barwick provisionals might be synonymous.

Amphitrite robusta can be keyed in Hartman '69 Atlas and Hobson and Banse 1981 (as Neoamphitrite)

- Three pairs of branching branchiae
- 17 notosetigers
- Notosetae distally dentate (look in posterior thoracic setigers)
- Uncini begin on second notosetiger, all are short handled, and all are avicular
- Last branchiae on first setiger
- Six setigers with single row of uncini followed by ten with double rows
- The last midventral pad is reduced in size and is followed by the last six thoracic setigers that lack midventral pads
- A thick, low lappet is present laterally below the first branchia and an additional shorter lappet is present on the following segment
- Eyespots absent
- Some very small speckles of methyl green stain on the dorsum with darkest stain on the midventral pads

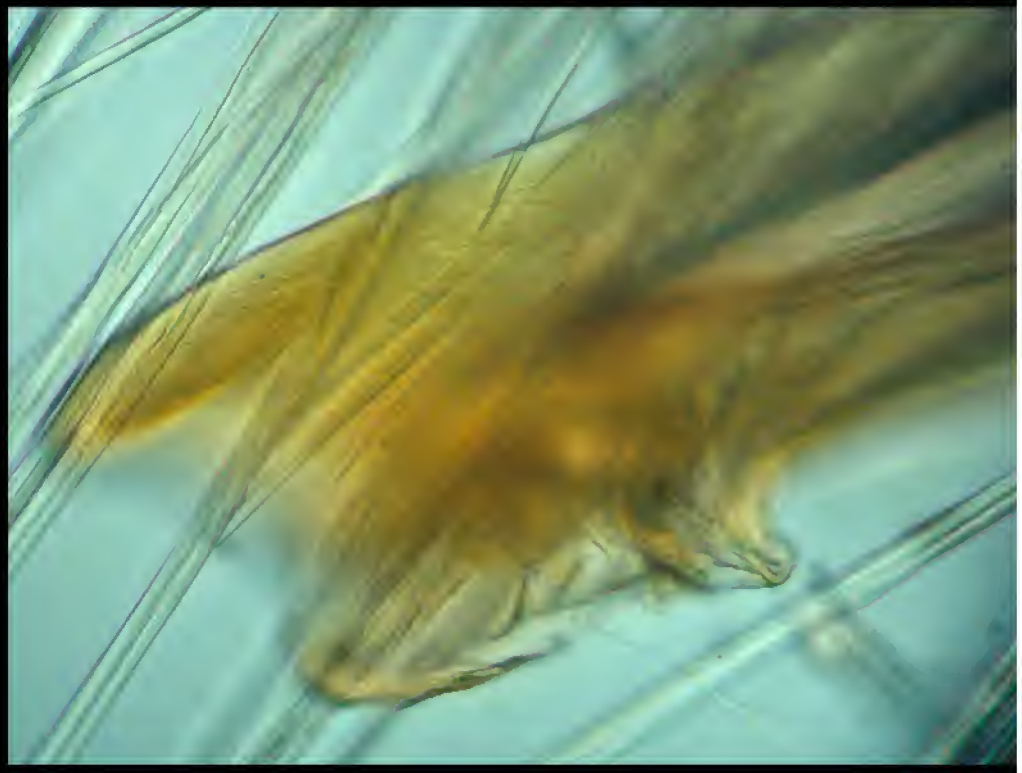


Male P. occidentalis Male Pinnixa sp.

Male P. occidentalis
Male Pinnixa sp.

Male P. occidentalis

Male Pinnixa sp.

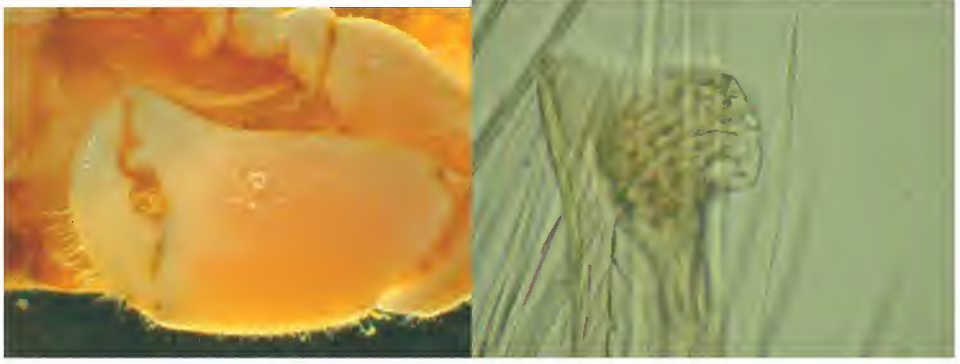


Male P. occidentalis Male Pinnixa sp.

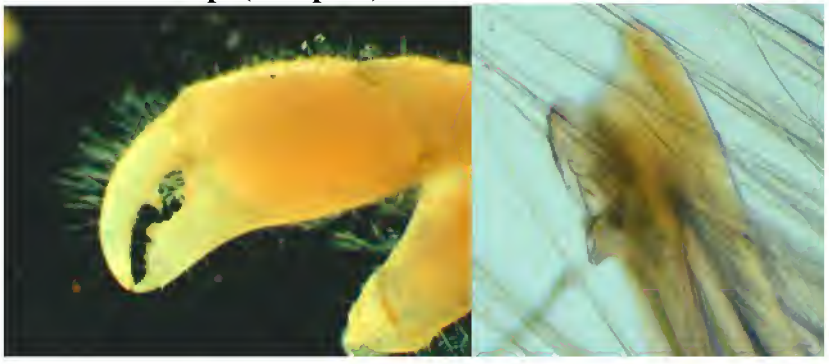
Documented Morphologies within the Pinnixa occidentalis CMPLX

Typical Male Pinnixa occidentalis (Morph 1):

Male Pinnixa scamit (Morph 2):



Male Pinnixa sp. (Morph 3):



SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

September/October, 2006 SCAMIT Newsletter Vol. 25, No. 3

Nereis sp A (=former *N. procera* of SCAMIT not Ehlers 1868). Ventral view of oral ring (partially everted proboscis). Specimen from City of San Diego, South Bay Ocean Outfall, station I-35, 7Jan02, 25m depth (scale bar= 0.5mm). Image by R. Rowe 8June02

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

SEPTEMBER 06 MINUTES

The September meeting was held at the Santa Barbara Museum of Natural History which is always a beautiful venue. It was well attended with 14 people present from various organizations and walks of life.

Kelvin Barwick called the meeting to order at approximately 9:45 a.m. and seeing as there was such a large, diverse crowd, called for people to give a brief introduction of themselves. After we had all met, Kelvin announced upcoming meetings.

Don Cadien (LACSD) had the floor next and briefly reviewed new literature of interest. He had brought copies of the July 2006 AMS/WSM meeting abstracts, and also passed around a new book of interest to slug enthusiasts - Caribbean Sea Slugs: A field guide to the opisthobranch mollusks from the tropical northwestern Atlantic.

Ron Velarde reminded us that the next International Polychaete meeting will be held in August of 2007 in Portland Maine.

Upcoming Meetings

April 9 - SCAMIT Invert List ed. 5 review, Crustacea at LACSD Lab

April 23 - SCAMIT Invert List ed. 5 review, Misc. Phyla at CSD Lab

May 7 - SCAMIT Invert List ed. 5 review, Polychaeta at the LACM, part II

May 21 - SCAMIT Invert List ed. 5 review, remaining issues clean up

June 11 - TBA

With that it was time for Kelvin to begin his powerpoint presentation on the beautiful and mysterious world of Nuculanids. Below is his write up of the taxonomic portion of the meeting.

A COMPARISON OF THREE CLOSELY RELATED SPECIES OF *NUCULANA* LINK, 1807 PRESENTED AT SCAMIT ON SEPTEMBER 11, 2006

By Kelvin Barwick (CSD) and Paul Valentich-Scott (SBMNH)

Recently we undertook a review of three closely related species of *Nuculana* reported by SCAMIT. Material was reviewed from City of San Diego (CSD), Los Angeles County Sanitation District (CSDLAC), The City of Los Angeles (CLAEMD), and The Santa Barbara Museum of Natural History (SBMNH). The subsequent information was presented at the September 11 SCAMIT meeting. Below is a brief synopsis of the results of our endeavors.

The three species in question were:

Nuculana taphria (Dall, 1896)
Nuculana penderi (Dall and Bartsch, 1910)
Nuculana elenensis (G. B. Sowerby I in Broderip and G. B. Sowerby I, 1833)

Figure 1 – *Nucula caelata* original illustration of type (Hinds, 1844-1845)

We began with a partial nomenclatural history for *N. taphria*. *Nucula caelata* Hinds 1843 was illustrated by Hinds in 1844-1845 (Fig. 1). Dall (1896) noted that *Nucula caelata* Hinds, 1843 was preoccupied by

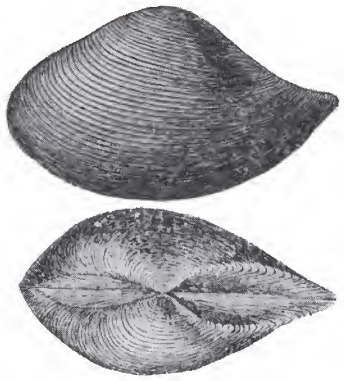

Figure 2 – *Nuculana taphria* modified from Keen, 1971 (From Dall, 1897)

Nucula coelata Conrad, 1833 and substituted *Leda taphria*. He did this without designating a type or providing a description. In 1897 Dall illustrated a USNM specimen (Fig. 2) as *L. taphria*. This image is reprinted by Keen, 1971. Hertlein and Grant (1972) stated that Dall's specimen has no type status, as it was a simple renaming of a homonym. They further conclude that, while recognizing the two forms as the same species, the illustration of *Nucula caelata* by Hinds (Fig 1) is the type for *Nuculana taphria*. Hinds' type material is lost at the BMNH.

Hertlein and Grant (1972) also noted that the description of *Leda taphria* in Oldroyd, 1925 is from Arnold, 1903. Arnold's illustration does not compare favorably with either Hinds' or Dall's. Given these facts, specimens from the participating agencies were compared with Hinds' illustration. It was agreed by all present that they were a good match. See Fig. 3 for a growth series.

Prior to the September 11 meeting the authors compared specimens of *N. penderi* (Fig. 4) from the CSD collection with type material of *Nuculana penderi redondoensis* J.Q. Burch, 1944 (Fig. 5), a synonym (Coan, et al, 2000), along with other lots in the SBMNH collection. After much discussion and without going into too much detail it was agreed that some lots were better fits than others, it was difficult to say whether the differences were ecomorphs or represented different species. It was decided to present these findings to the SCAMIT members at the meeting. At that meeting it was agreed that SCAMIT would continue to use this name until more research can be conducted. See the growth series Fig. 6-8.

A comparison of the SCB material with images of the syntypes at the BMNH of *N. elenensis* revealed that they are not the same species (Fig. 9). *N. elenensis* is a Panamic species ranging from Cruz de Huanacaxtle, Nayarit, Mexico to Bahia de Sechura, Peru, (Coan and Valentich-Scott, in preparation). All southern California records for this species are called into doubt. It is unclear at this juncture what name should be applied. Further research is needed to determine whether the SCB material represents an undescribed species or simply an overlooked species. At the meeting it was agreed that, in the interim, this form will be given a provisional name under SCAMIT. See the attached provisional voucher sheet for *Nuculana* sp A.

Figure 3 – *Nuculana taphria* CLAEMD: HM9/LAH, 28JUL05, 24 m (Length ranges from 2.5 mm to 13.6 mm)

Figure 4 – *Nuculana penderi* holotype USNM 211606 as Leda penderi (Length ~ 8 mm) (Image modified from Frank R. Bernard's original unpublished photo.)

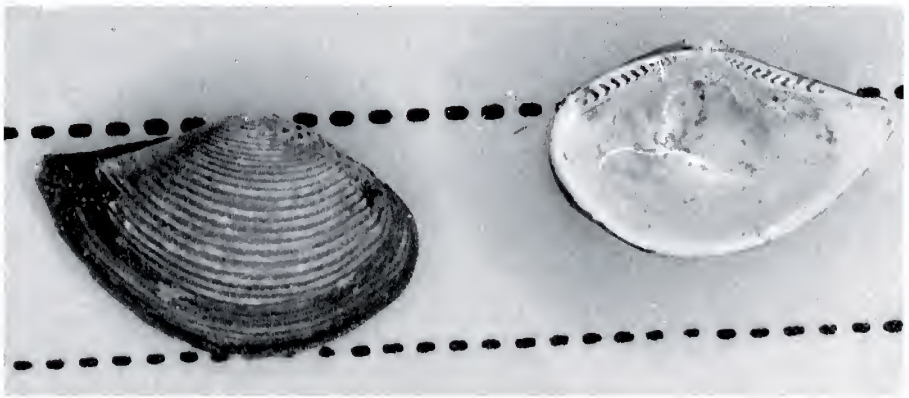

Figure 5 – *Nuculana penderi redondoensis* holotype CAS Stanford 7871 (Image modified from Frank R. Bernard's original unpublished photo.)

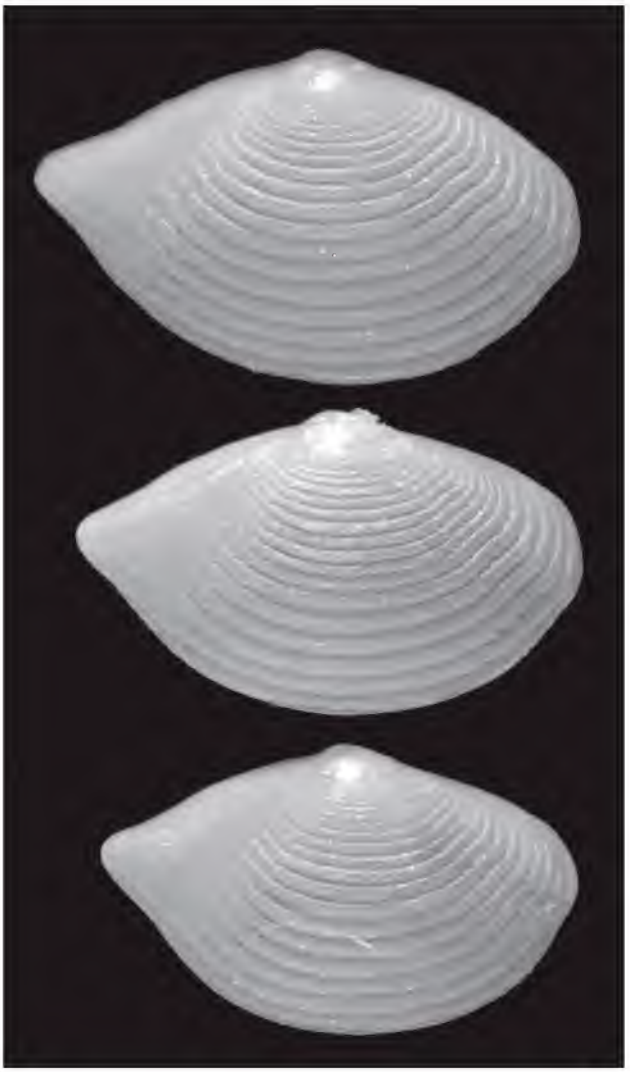

Figure 6 – *Nuculana penderi* LACSD: E-30, Nov., 1997

Figure 7 – *Nuculana penderi* dorsal and lateral view, LACSD E-30, Nov. 1997 (Length = 5.4 mm)

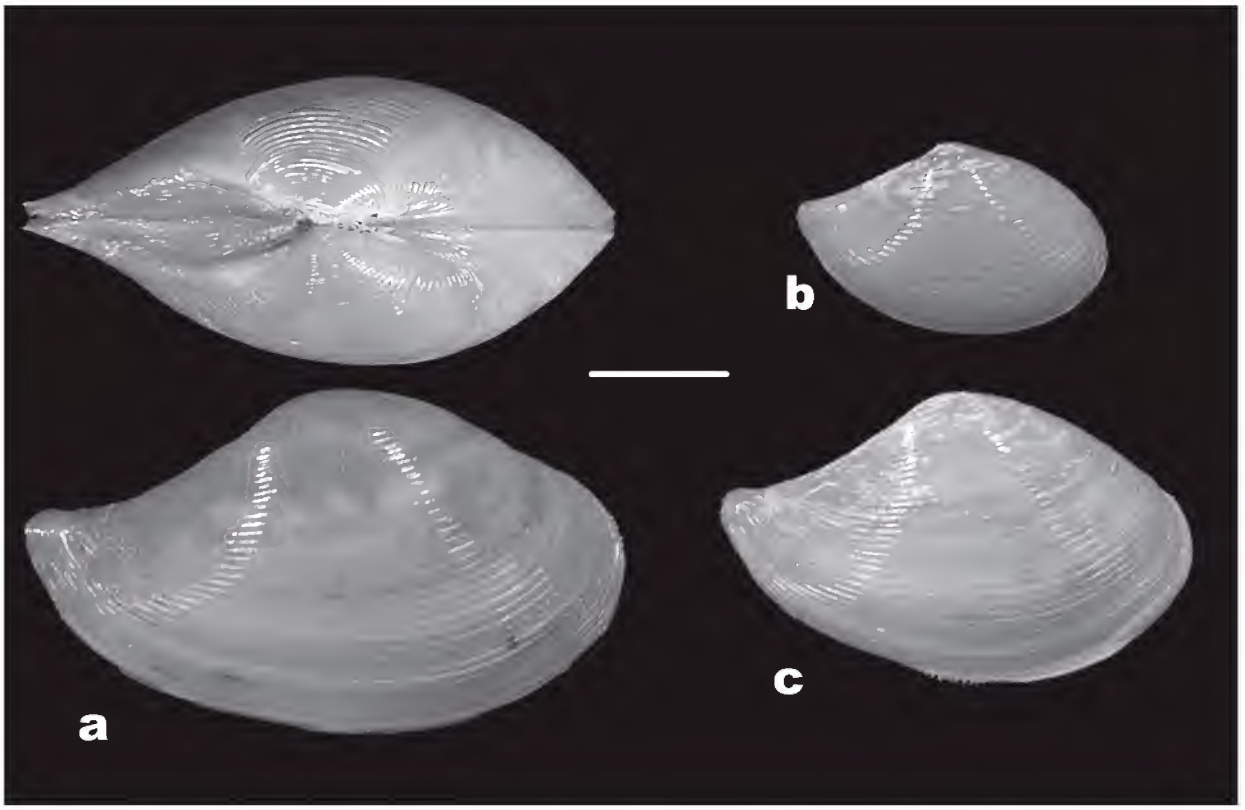

Figure 8 – *Nuculana penderi* a. dorsal and lateral view, CSD: I33(1), 6JUL05, 32 m (K. Barwick personal collection 304); b. CSD: I31(1), 10JAN06, 21 m; c. CSD: I4(2), 10JAN97, 64 ft (K. Barwick personal collection 124) (Scale bar = 5 mm).

Figure 9 – *Nuculana elenensis* Sowerby syntype BMNH 1967975

OCTOBER 06 MINUTES

The purpose of the meeting was to understand the characters used to distinguish the several *Aoroides* taxa that have been reported from the Southern California Bight (SCB), clarify the distinguishing characters of *Aoroides* sp A SCAMIT 1998, and relate the importance of Conlan and Bousfield (1982). The meeting began with a slide show where Dean introduced the characters he uses to identify *Aoroides* (Amphipoda: Aoridae), which generally follow those listed by Conlan and Bousfield (loc cit.) (see below). Afterwards, specimens were reviewed and discussed. The interesting questions that were in need of resolution included the lack of records of *Aoroides* sp A SCAMIT 1998 from collections outside of the San Diego area, and verification of *A. secundus* Gujanovae. First, specimens of *A. secundus* were reviewed and distinguished from *Aoroides* sp A by the absence of a peduncular process on uropod 2 and the presence of distinctive maxilliped outer plate teeth (see below). Specimens of *Aoroides* sp A from San Diego collections were reviewed and distinguishing characters verified. However, review of specimens listed as *A. spinosus* Conlan and Bousfield from Los Angeles County Sanitation District (LACSD) collections, were found to be large specimens of *Aoroides* sp A. These specimens are to be reviewed by LACSD staff to verify these tentative identifications made during the meeting. Other specimens from LACSD collections were examined and determined to be in need of review in light of the characters presented at the meeting.

The list of characters discussed at the meeting is presented below with notes from the meeting and subsequent review integrated where appropriate. A revised table comparing *Aoroides* sp A from those two species with which it is most likely to be confused (*A. secundus* and *A. inermis* Conlan and Bousfield) is also presented below.

Mandibular palp, article 2: the presence/absence of a seta in the distal one-third of the article. Typically, this is a long, thin seta and easy to see; although it is sometimes broken and both palps should be examined if the first examination finds the seta absent.

- The seta is absent in *Aoroides exilis* Conlan and Bousfield and *A. spinosus*, *A. secundus*, *A. nahili* JL Barnard, and *Aoroides* sp A
- The seta is present in *A. columbiae* Walker, *A. intermedius* Conlan and Bousfield, and *A. inermis*
- *A. columbiae* reported from Hawaii by JL Barnard (1970) depicts a male specimen without a seta on article 2 (see Figure 32e). Conlan and Bousfield (1982) indicate that this record, among others from southern California and Japan is in doubt (page 92)

Maxilliped outer plate teeth: presence/absence of cusps. The maxilliped must be removed, mounted on a slide, viewed with a compound scope at 200 to 400 power to see the inner marginal teeth and cusps. The cusps vary in size and number depending on the species, sex, and maturity of the specimen. The condition of the outer plate can be used to distinguish 4 SCB species: *Aoroides secundus*, *A. columbiae*, *A. intermedius*, and *A. inermis*.

- A specimen of *A. secundus* collected from San Diego Bay during Bight'98 was reviewed and found to have distinctive, strong, sharp cusps on the outer plate teeth
- The other 3 taxa (*A. columbiae*, *A. intermedius*, *A. inermis*) are distinguished,

in order, by decreasing numbers of cusps from strongly serrated with 1–4 cusps on each of the lower teeth, to weakly cusped with 0–1 cusps per lower tooth, to entirely smooth lower teeth

- *Aoroides* sp A has outer plate teeth that appear more triangularly shaped than most of the other taxa (i.e., less broad at their mid-point and more narrow and tall distally), with 1–2 cusps, and finely toothed (serrated) lateral margins on the upper teeth and smooth margins on the lower teeth

Uropod 2 peduncle process: the presence/absence and relative size of a ventral disto-medial process of the peduncle. It is sometimes difficult to distinguish whether or not this process is present. In many cases, it may be necessary to remove the second uropod and mount it on a slide to reliably determine its presence or absence.

- This process is absent and the distal margin of the peduncle is straight in *A. secundus* (and *A. nahili*)
- The process is present, but is extremely small, low, broadly triangular (relatively), and easily obscured by the uropodal rami in *Aoroides* sp A. One must look closely when dealing with this taxon. If the tooth appears to be absent, but the distal end of the peduncle does not appear straight, you must look more closely, remove the uropod, and view it under a compound microscope.
- According to the illustrations in Conlan and Bousfield (1982), *Aoroides exilis, A. columbiae*, and *A. intermedius* appear to have relatively strong peduncular processes on uropod 2 that reach nearly one-half the length of their respective rami. I have this to be true for *A. exilis* and *A. columbiae*, but I have not examined specimens of *A. intermedius*.
- *Aoroides spinosus* and *A. inermis* have relatively short processes that appear to reach ≤ 1/4 the length of the rami

Spination of uropod 3 rami: The presence or absence of "strong" spines on the outer ramus of uropod 3 can be helpful, although distinguishing "strong" spines from "small" ones can sometimes be difficult.

- "Strong" spines are illustrated for *A. exilis* and *A. spinosus* (Conlan and Bousfield loc cit.: Figures 9, 10)
- "Small" spines are illustrated for *A. inermis*, *A. intermedius*, and *A. columbiae* (Conlan and Bousfield, loc cit.: Figures 4, 5, 7, 8)
- *Aoroides* sp A has 1–2 strong spines on the outer ramus of uropod 3

Posterior marginal setae of gnathopod 1 basis in males: This character can be helpful to separate out two species from the rest when males are present.

- Males of *A. exilis* and *A. spinosus* have pairs of setae on the posterior margin of the basis of gnathopod 1; all the other taxa discussed above do not.

Female gnathopod 2 basis distal group of setae: The presence or absence of a group of setae distally on the basis of gnathopod 2 in females was found to be unreliable and should not be used. This character was added (by Dean) prior to the meeting as being potentially useful, but determined to be unreliable through the course of specimen reviews at the meeting.

Aoroides spp Character Table

Character	*Aoroides secundus*	*Aoroides* sp A	*Aoroides inermis*
Mn palp	bare	bare	setose
Mxpd outer plate	all teeth w/ 1–3 distinct cusps, teeth acutely tipped	triangularly shaped w/ 1–2 cusps and finely toothed (serrated) margins	distal teeth w/ 0–3 cusps, proximal teeth smooth
Male Cx1	broad, produced w/ 4–5 long terminal setae	broad, distally produced, w/ strong terminal spine	narrowed, unproduced, w/ setal group distally
Male Gn1 basis, anterior /posterior marginal setae	dense plumose setose (juveniles w/ fewer simple setae) / bare	few widely spaced setae (6–10) in spms from SD, but dense in presumed spms from LACSD/ bare	dense setose / bare (lateral groups of setae present)
Male Gn1 carpus	densely setose; juveniles w/ few setae	bare anteriorly	setose
Female Gn1 basis	w/ 1+ long (~= basis width) distal setae	single short (< ½ basis width) distal seta present	w/ 2+ long (> basis width) distal setae
Ur2 peduncle	Process absent	w/ very small process	w/ small (< 1/5th rami) process
Ur3 outer ramus	1+ large spine(s)	Bare	Bare

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Hinds, R. B. 1844-1845. The zoology of the voyage of H. M. S. Sulphur, under the command of Capt. Sir Edward Belcher, … during the years 1836-42, Vol. 2 Mollusca. London, Smith, Elder & Co. 72 pp.

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Valdés, Angel, Hamann, Jeff, Behrens, David W., DuPont, Anne. 2006. Caribbean Sea Slugs: A field guide to the opisthobranch mollusks from the tropical northwestern Atlantic. Sea Challengers Natural History Books, Etc., Gig Harbor, Washington. 288pp.

CORRECTION

Member Rick Rowe (CSD) caught a mistake in our last newsletter and we are grateful for his sharp eye and bringing the following to our attention: "In the last paragraph on polychaete stuff there is a reference to *Polydora hoplura* with the describer as "Klapure". Actually the describer is **Claparède, 1870**".

PISTA CLARIFICATION

Attached at the end of this newsletter is a very detailed and informative hand-out on *Pista* created by Rick Rowe. All polychaete workers should review it as it clarifies some of the recent issues with the SCB *Pista* species.

NEREIS SP A

Continuing on with information for polychaete enthusiasts, member Bill Furlong (CSDLAC) has created a SCAMIT voucher sheet for *Nereis* sp A. You will find this invaluable document also attached at the end of the NL.

ELECTION

Due to the pulmonate gastropod speed with which the newsletters are being published, we are obviously behind on "current" events. Therefore, even though this is technically the September-October 2006 newsletter, it is being published in April of 2007, which means it is time for SCAMIT elections. You will find below the candidate statements, and attached at the end of the newsletter, the SCAMIT Ballot. You will notice one striking change among the list of candidates, which is relatively rare in SCAMIT elections – SCAMIT President Kelvin Barwick has resigned his post to pursue other opportunities and SCAMIT member Larry Lovell has been nominated and accepted the nomination. Please take the time to cast your vote and remember, write-in candidates are always welcome.

CANDIDATE STATEMENTS

PRESIDENT

Larry Lovell
I graduated with a BS in Biology from USC (University of South Carolina) in 1973. I began my career as a marine invertebrate taxonomist in 1974 at the USC Baruch Field Station in Georgetown, South Carolina, where I received my initial training from Dan Dauer. I came to southern California in 1975 to work on the BLM project in the USC worm lab with Kristian Fauchald where I began specializing in polychaete taxonomy. I have been working in southern California since that time in both academic settings (USC and SIO) and environmental consulting (MEC/Weston and independent contractor). I currently work at the Marine Biology Laboratory of the Los Angeles County Sanitation Districts. I have given oral and poster presentations at SCAS meetings, International Polychaete Conferences, and published in the scientific literature. I am a charter member of SCAMIT and served as vice-president from 1989-1994. I am an active member of SCAMIT and have led several meetings and workshops covering various polychaete families. As President, I plan to continue SCAMIT's original goal of standardizing and promoting local marine invertebrate taxonomy and to provide leadership and direction in addressing the organization's challenges and opportunities.

VICE-PRESIDENT

Leslie Harris
Collections manager of the Allan Hancock Foundation Polychaete Collection, at the Los Angeles County Museum of Natural History. Ongoing research centers on taxonomy of the polychaete fauna of pacific North America, polychaete-algal associations (especially in *Macrocystis*), introduced species, and Caribbean reef polychaetes.

SECRETARY

Megan Lilly
Graduated from Humboldt State University in 1991 with a B.S. in Marine Biology. From 1991-1993, worked at the Santa Barbara Museum of Natural History where the taxonomy of marine mollusks was studied under Dr. Eric Hochberg, Paul Valentich Scott, and Henry Chaney. Currently working as a marine biologist for the City of San Diego's Ocean Monitoring Program. Specialties include echinoderms, miscellaneous phyla and mollusks with an emphasis on cephalopods.

TREASURER

Cheryl Brantley
Cheryl is a marine biologist with the County Sanitation Districts of Los Angeles County. She has worked for the Districts for over 16 years, primarily as a polychaete taxonomist. She graduatedwith her B.A. degree in Aquatic Biology from the University of California, Santa Barbara in 1985. She has formerly served as Secretary of SCAMIT from 1994-1998.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

President	Kelvin Barwick	(619)758-2337	kbarwick@sandiego.gov
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Cheryl Brantley	(310)830-2400x5605	cbrantley@lacsd.org

Back issues of the newsletter are available. Prices are as follows:

Volumes 1 - 4 (compilation)	$ 30.00
Volumes 5 - 7 (compilation)	$ 15.00
Volumes 8 - 15	$ 20.00/vol.

Single back issues are also available at cost.

The SCAMIT newsletter is published every two months and is distributed freely through the web site at www.scamit.org. Membership is $15 for the electronic copy available via the web site and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All new members receive a printed copy of the most current edition of "A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates … in the Southern California Bight." The current edition, the fourth, contains 2,067 species with partial synonyms. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
C/O The Natural History Museum, Invertebrate Zoology
attn: Leslie Harris
900 Exposition Boulevard
Los Angeles, California, 90007

SCAMIT Voucher Sheet

Species: *Nuculana* sp A
Group: Nuculanidae

Vol. 25, No. 3

Date examined: 11 September 2006
Vouchered by: P. Valentich-Scott & K. Barwick

Material Examined: 3 spm: CSD Sta. B11(2), 14JUL92, 288 FT, SBMNH#80296
1 spm: CSD Sta. B11(1), 14JUL92, 288 FT, SBMNH#80298
1 spm: CSD Sta. B5(2). 14JUL92, 200FT, SBMNH #80297
14 spm: CLAEMD Sta. FB17, SMB, 25JUL05, 115m
1 spm: LACSD Sta. 9B JUL96

Synonyms: *Nuculana elenensis* of authors SCB not (G. B. Sowerby I in Broderip and G. B. Sowerby I, 1833)
Nuculana sp SD1 Barwick, 1992

Description: Shell periostracum silky, with lighter colored streaks radiating from the umbone to the outer margin of the shell (seen in dry specimens); color is light tan to dirty white (Fig. 1-3) Sculpture of slightly rounded commarginal ridges evenly spaced ending abruptly at the posterior-dorsal slope. Posterior produced in sharp point, acute. Shell moderately inflated with narrow escutcheon. Lunule shallow, narrow (Fig. 3). Length to 6 mm.

Related Species: *Nuculana elenensis,* unlike *N.* sp A, has a pointed strongly recurved posterior. *N. taphria* (Dall, 1896), when compared to *N.* sp A, has a more rounded, produced posterior. The commarginal sculpture of heavy ribs becomes obsolete along the posterior-dorsal slope. *N. penderi* (Dall & Bartsch, 1910) has a shorter, less acute posterior, slightly recurved in larger specimens. The shell of *N. penderi* is typically plumper and can reach a much larger size than *N.* sp A. *N. eburnean* (G. B. Sowerby, 1833), a panamic species, possesses an acute pointed posterior but has fine dense commarginal sculpturing.

Distribution: Point Loma to Santa Monica Bay, California. Depth for CSD records: 60 – 200 m.

Comments: Historically this species has been identified as *N. elenensis* by workers in the SCB. Based, in part, on these records Coan, et al (2000) reported the distribution for *N. elenensis* to occur as far north as Santa Monica Bay. Subsequently Coan and Valentich-Scott (in preparation) now believe it to be restricted to the Panamic Province. A comparison of the SCB material with the images of the syntypes from the BMNH bears this out. All southern California records for *N. elenensis* are in doubt.

Literature: Coan, Eugene V., Paul Valentich-Scott and Frank R. Bernard. 2000. Bivalve Seashells of Western North America: Marine Bivalve Mollusks from Arctic Alaska to Baja California. Santa Barbara Museum of Natural History, Santa Barbara, California. 764 pp.

SCAMIT Voucher Sheet

Species: *Nuculana* sp A

Group: Nuculanidae

Vol. 25, No. 3

Fig. 1 – CLAMED: FB17/SMB, 115m, 25JUL05 (Length ranges from 5.5 mm to 2.5 mm.) Dry mount

Fig. 2 – LACSD: 9B 7/1996 (length = 4.9 mm) Dry mount

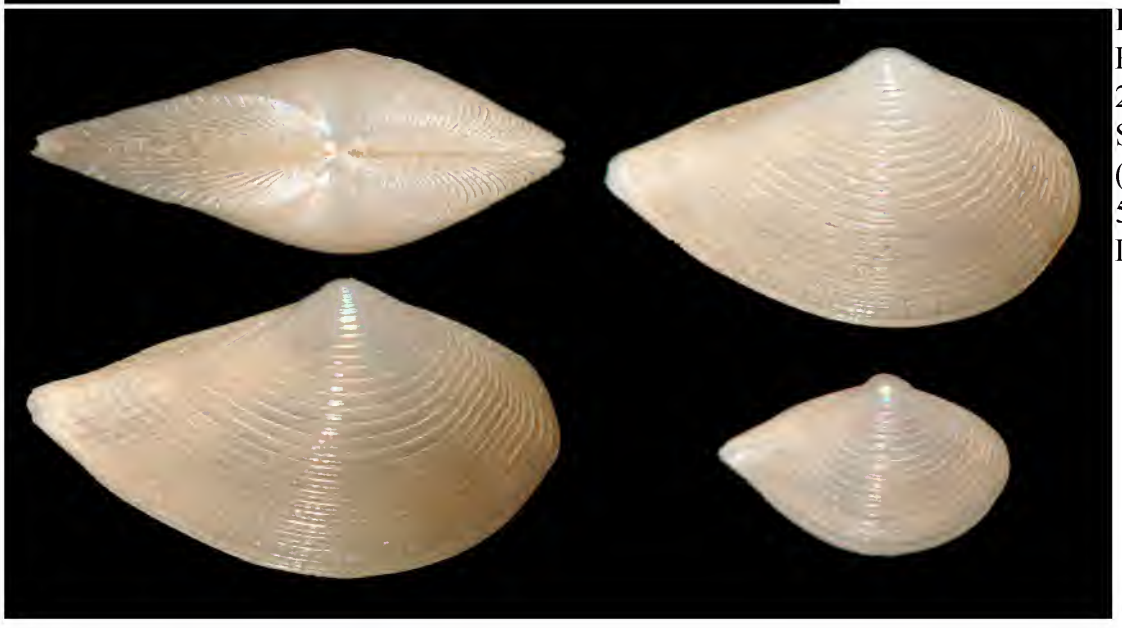

Fig. 3 – CSD: B11(2), 14JUL92, 288 FT, SBMNH#80296 (Length ranges from 5.2 mm to 2.6 mm.) Dry mount

The Nomenclature of P. agassizi, P. brevibranchiata, and P. alata

R. Rowe 1 March 2007

Hilbig 2000 described two species, *P. agassizi* and *P. percyi*. Hilbig considered *P. brevibranchiata* Moore 1923 to be unavailable as a valid name. SCAMIT (guided by the careful consideration of the historical descriptions and nomenclatural rules by Leslie Harris) considers *P. brevibranchiata* to be available and the correct name to use for the holotype of *P. fimbriata* (as did Hartman 1959, 1969 and other authors), and *P. percyi* Hilbig 2000 a junior synonym of *P. brevibranchiata*. Moore lost the 1911 manuscript in which *P. fimbriata* was described (although the holotype was deposited at the USNM), but did refer to it as *P. brevibranchiata* in his 1923 manuscript.

Chamberlin's 1919 holotype for *P. brevibranchia* (note this is not "brevibranchiata") was examined by Ruff and information he provided to Hilbig enabled her to differentiate it from Moore's *P. fimbriata* holotype. But *P. brevibranchia* is a homonym and unavailable, consequently *P. agassizi* Hilbig, 2000 becomes the valid name.

Originally Harris suspected that Hilbig's specimen of *P. agassizi* was simply aberrant with an extra pair of very small lappets (and that name a synonym of *P. brevibranchiata*). Only the single, holotype specimen of *P. fimbriata* (= *P. brevibranchiata*) was examined by Ruff (or Hilbig 2000) so variation in the last lappets could not have been evaluated. After recently reviewing many *Pista* specimens from shallow waters along the California coast, Harris decided that two similar, but differentiable taxa, *P. agassizi* and *P. brevibranchiata*, do exist. She saw specimens that match Hilbig's description of *P. agassizi* but only north of Point Conception (Chamberlin's type specimen of *P. brevibranchia* is from Mendocino, California).

Many taxonomists in the Northeastern Pacific identified common subtidal (often embayment), soft substratum specimens as *Pista alata*. After examining Moore's holotype specimen several years ago, SCAMIT members realized that their use of *P. alata* was in error. While the dorsal membrane in the common specimens is developed, it is usually notched and never projecting forward as a rounded process like it does in the *Pista alata* holotype. The common subtidal specimens match *Pista brevibranchiata* (as *P. percyi* Hilbig 2000).

Below is a summary of the Harris observations and comments to SCAMIT. For clarification of SCAMIT recognized nomenclature, see Table 1.

Pista agassizi Hilbig 2000

- Occurs on hard substrata in tubes among algae and often intertidal
- Chamberlin's 1919 holotype specimen described as *Pista brevibranchia* was collected intertidally in Mendocino, California.
- May occur only north of Pt. Conception
- The dorsal membrane is small and not notched.
- A small frill of a lappet (the last) is present on segment 7.
- Specimens previously referred to this taxon in Southern California, because of confusion of the proper nomenclature, are likely *Pista brevibranchiata*.

Pista brevibranchiata Moore 1923

- Found in soft substrata (infaunal) or in sediments trapped within hard substrata
- Builds smooth, thick walled tubes
- Common in Southern California in shallow water including embayments
- The dorsal membrane projects anteriorly and normally possesses a pair of notches (variable).
- No lappets present on segment 7.
- Dark staining is present on the ventral shields, dorsally across the first few setigers, and extending posteriorly just above the notosetal fascicles.
- Eggs are very small (not noticeable).
- Specimens previously referred to *Pista percyi* in Southern California are likely *Pista brevibranchiata*.
- Before the year, 2000, most of the specimens referred to *Pista alata* in Southern California are likely *Pista brevibranchiata*.

Pista alata Moore 1909

- Hilbig's 2000 description and illustrations are good representations of the condition of Moore's type specimen from intertidal San Diego (Mission Bay) except that the branchiae in the specimen are more arborescent than Hilbig's (Ruff's) illustration.
- SCAMIT viewed Moore's type and the forward projecting dorsal membrane is distinctive.
- Likely occurring only in intertidal or very shallow embayments and harbors, and apparently rare.
- Specimens identified as *Pista alata* in Southern California before 2000 are likely *Pista brevibranchiata* because of the misinterpretation of the dorsal membrane morphology by SCAMIT (and other) taxonomists.

Pista spp Recently Reported to SCAMIT as Provisional Species

Pista **sp 1** fide Harris

- This is a small species found in kelp holdfasts (currently).
- This taxon exhibits Form 1 (*Pista* spp sensu stricto) morphology (see Table 2).
- *P. brevibranchiata* is morphologically similar but the tube of *P.* sp 1 differs because its construction includes some detritus.
- Light staining ventral shields are present, but there is no stain on the dorsum above the notosetal fascicles.
- Eggs are very large compared to the specimen size and noticeable in preserved specimens.

Pista **sp SF1** fide Norris

- Reported from San Francisco Bay.
- This taxon exhibits Form 1 (*Pista* spp sensu stricto) morphology (see Table 2).
- Methyl green staining is light and restricted (very little stain).
- Branchiae have a very long primary shaft (before the first division).
- Eyes are present (unusual for *Pista*).

Pista sp beta fide Lovell

- Reported from Santa Monica Bay and off the Palos Verdes Peninsula in Southern California (30m).
- This taxon is recognized by SCAMIT as a staining variant of *Pista wui*, but very similar in other morphology.
- Dorsal methyl green stain is present on setigers 2-7 and is absent thereafter, while the dark dorsal stain of *P. wui* continues through most of the thoracic region.
- This staining pattern is very similar to that shown for *Pista cristata*, a north Atlantic species in illustrations provided to SCAMIT by Leslie Harris in 2002 (Rowe distributed CD).
- Lovell has prepared an identification sheet with color images.

References

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Moore, J. P. 1923. The polychaetous annelids dredged by the U.S. "Albatross" off the coast of southern California in 1904. IV. Spionidae to Sabellariidae. Proceedings of the Academy of Natural Sciences in Philadelphia 75:179-259.

Table 1: SCAMIT Nomenclature for *Pista* spp

Genus	Species	SCAMIT Taxonomic Status	Current SCAMIT Nomenclature	Morphological Form (see Table 2)	Comment (SCAMIT & California records)
Pista	***agassizi***	valid	same	1	previously ***P. percyi*** & ***P. brevibranchiata***
Pista	***alata***	valid	same	1	Harris S. Calif. shallow & Phillips Newport Bay & Huntington Harbor
Pista	***bansei***	synonym	***P. estevanica***		includes former ***P.* sp B** of SCAMIT
Pista	***brevibranchia***	homonym	***P. agassizi***		Chamberlin's holotype specimen
Pista	***brevibranchiata***	valid		1	Previoulsy ***P. percyi*** & ***P. alata***
Pista	***cristata***	valid			not reported from Northeastern Pacific
Pista	***disjuncta***	??			Identity needs clarification
Pista	***elongata***	valid		2	
Pista	***estevanica***	valid		1	Previously ***P. bansei*** & ***P.* sp B**
Pista	***fasciata***	valid			Not reported by SCAMIT / S. Calif. records misidentified & likely ***P. wui***
Pista	***fratella***	nomen dubia	indeterminable	1	type dried
Pista	***moorei***	valid		2	
Pista	***pacifica***	valid		2	Not reported by SCAMIT for S. Calif.
Pista	***percyi***	abandon name	***P. brevibranchiata***		Moore 1923 manuscript established ***P. brevibranchiata***
Pista	***wui***	valid		1	Previously ***P.* sp C**, ***P. disjuncta***, & ***P. fasciata***
Betapista	***dekkerae***	valid		2	Not reported by SCAMIT for S. Calif.
Recently reported provisional taxa					
Pista	**sp 1 fide Harris**	valid		1	Requires definitive descriptive documentation for SCAMIT
Pista	**sp SF1 fide Norris**	valid		1	Taxon of interest outside SCAMIT geographical range
Pista	**sp beta fide Lovell**	synonym	***Pista wui***	1	Currently staining variant of ***P. wui*** needing additional review

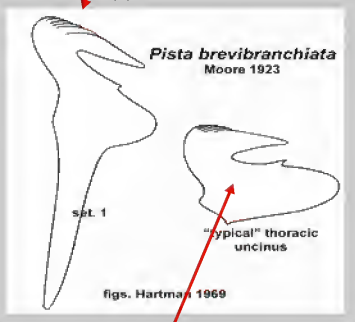
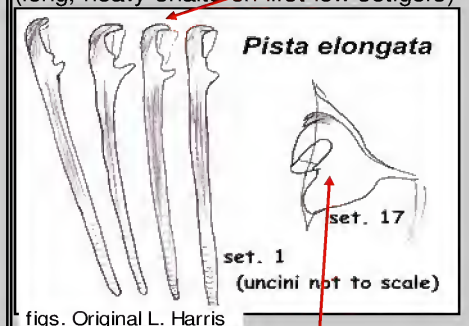
Two morphological forms of *Pista* & *Betapista*

Leslie Harris has examined type specimens for all reported Northeastern Pacific species of *Pista* except *P. agassizi* and *P. disjuncta*, and separates species in the genus into two morphological forms. (Note that the paratype of P. *estevanica* is an abdominal fragment).

Form 1 is represented by *Pista cristata* (Muller, 1776) from Norway, the type species for the genus, *Pista* (Harris has images of live specimens of *P. cristata* from near the type locality). Form 2 is represented by *Betapista dekkerae* Banse, 1980. Leslie determined that the holotype of *B. dekkerae* was an aberrant specimen missing the first branchiae and the first lappet on one side. The first branchial scars are visible in the type when examined very carefully. So *Betapista* does have branchiae starting on the second segment (like all other "*Pista*"). But there are other characters that make *Betapista* distinct from *Pista* (sensu stricto).

Table 2: Two Primary Morpholgical Forms of Pista / Betapista

Tabular Summary of SCAMIT July 2006 & February 2002 Presentations by Leslie Harris

	FORM 1	FORM 2
REPRESENTATIVE TAXA	***Pista* spp (sensu stricto) - *Pista cristata* - *Pista agassizi* - Pista alata - *Pista brevibranchiata* - *Pista estevanica* - *Pista wui***	***Betapista dekkerae* - *Pista elongata* - *Pista pacifica* - *Pista moorei***
CHARACTERS		
Branchiae	2 pair	3 pair
Branchial insertion	segment 2	segment 2
Nephromixia (internal morphology from Smith 1994)	3 pair (also reported as nephridial papillae or pores)	> 3 pairs
Nephromixia location (internal morphology from Smith 1994)	segments 2, 5, & 6 [1 pair excretory (ENMX) then 2 post-septum pair reproductive (RNMX)]	2 pair excretory and anterior to septum (located at theposterior margin of segment 4), and up to 11 post-septum pair
Anterior thoracic uncinal dentition and shape	multiple teeth above the large single primary tooth (long shafted on first few setigers usually) 	crest is smooth or with only vestigial teeth and contiguous with primary tooth (long, heavy shafts on first few setigers) 
Shape of posterior thoracic uncini	similar to anterior	similar to FORM 1
Size of anterior thoracic uncini	subequal to posterior thoracic	greatly enlarged in first few setigers then decreasing in size
Size of posterior thoracic uncini	subequal to anterior thoracic	much smaller than anterior uncini (similar to FORM 1)
Ventral shields (scutes)	anterior well defined and typical of those on following segments / anterior may be grooved	anterior few crenulated without the well defined border of those on following setigers / in some taxa the poorly delimited shields may continue to the mid thoracic region
		Table by Rowe 070226

Most of the information provided in this document was presented by Leslie Harris at the SCAMIT Terebellidae meeting 11July2006 (LACMNH-worm collection room)

***Nereis* sp A of SCAMIT** SCAMIT Vol. 25, No. 3
Family: Nereididae

Synonymy: *Nereis procera* of authors NEP, not Ehlers 1986 **Examined:** 08 Mar 07
Nereis nr. *procera* of Hyland *et al.*, 1990 **Examined by:** Bill Furlong
Nereis nr. *procera* of Lissner *et al.*, 1986 LACSD
Nereis sp B of Lissner *et al.*, 1986

Literature:

1. Hartman, O., 1968. Atlas of the Errantiate Polychaetous Annelids of California. pp. 1-828
2. Hilbig, B., 1997. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and the Western Santa Barbara Channel. Vol. 4, Chp. 12, pp. 291-316.
3. Johnson, H.P. 1901. The Polychaeta of the Puget Sound region. Proceedings of the Boston Society of Natural History 29(18): 381-437.
4. SCAMIT Newsletter, August, 2002. Vol. 21, No. 4, pgs. 2-5.

Diagnostic Characters:

1. Ventral cirri single throughout
2. Two pairs of small round eyes
3. Conical paragnaths on both rings of proboscis, absent on Areas I and V
4. Notopodia with homogomph falcigers

Discussion:

At a SCAMIT meeting in August, 2002, Leslie Harris reported on her examination of Ehler's type specimen of *Nereis procera* (SCAMIT Newsletter, Vol. 21, No.4), which is from the Gulf of Georgia and was approximately 120mm long and 4mm wide. Leslie noted 8-9 teeth on the jaws and that the paragnaths were tiny, colorless, and present on all eight regions of the prostomium. Soft bottom specimens from the southern California region also have 8-9 teeth on the jaws and the paragnaths are also often small and inconspicuous. Local specimens, however, differ in being much smaller (typically less than one sixth the length of the type) and paragnaths are absent from Area's I and V of the prostomium. Thus, it was recommended by Leslie and agreed upon by present SCAMIT members to erect a *Nereis* sp A designation for specimens previously referred to as *Nereis procera* in the southern California area.

Depth Range: Reported 23m to 305m by LACSD

Habitat and Distribution: Silt and silt mixed with sand from western Canada to southern California.

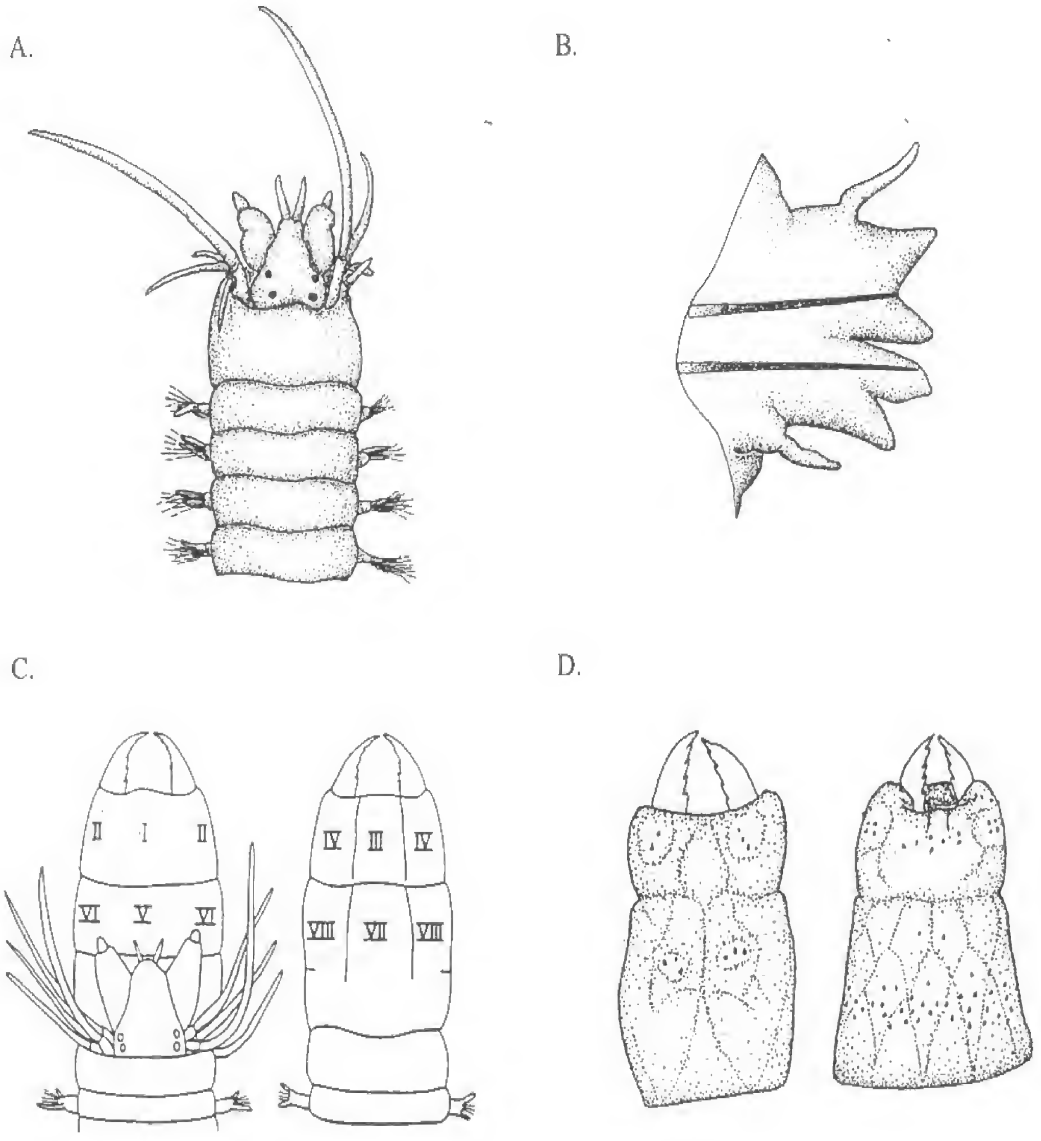


Figure 1. *Nereis* sp A of SCAMIT: A. anterior, dorsal view; B. middle parapodium, anterior view; C. areas of proboscis; D. dorsal and ventral view of proboscis and paragnath pattern (A,B after Johnson, 1901; C,D after Hilbig, 1997).

Figure 2. Ventral view of paragnaths on partially everted proboscis (Photo courtesy of Rick Rowe, CSD).

BALLOT FOR SCAMIT OFFICERS 2007-2008

Vote for one (1) nominee for each office. Please mail or return the completed ballot to Leslie Harris by June 12th 2007. You may return it to the Secretary or other attending officers at the June meeting. The address to mail it to is:

Attn: Leslie Harris
Worm Lab
Los Angeles County Museum of Natural History
900 Exposition Blvd
Los Angeles, CA 90007

President – The president presides at all meetings and represents SCAMIT in external business affairs.

_____ Larry Lovell
_____ Write in: _____

Vice-President – The Vice-President chairs ad hoc committees, supervises the specimen exchange, tabulates election ballots, and fills in for the President as necessary.

_____ Leslie Harris
_____ Write in: _____

Secretary – The Secretary keeps minutes of the meetings, is responsible for the newsletter, and preparation of the ballots.
_____ Megan Lilly
_____ Write in: _____

Treasurer – The Treasurer collects dues, makes disbursements, keeps financial records, and makes an annual statement of the financial status of SCAMIT.
_____ Cheryl Brantley
_____ Write in: _____

2007-2008 SCAMIT Meeting Topics – Please suggest any topics you deem worthy of a SCAMIT meeting.

_____
_____

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

November/December, 2006 SCAMIT Newsletter Vol. 25, No. 4

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

NOVEMBER 2006

On 17 November SCAMIT met in the Crustacea section of the Natural History Museum of Los Angeles County. The guest speaker was Dr. Sammy de Grave of the Oxford Museum, who was visiting the section for his own research purposes, and agreed to meet with us to discuss decapods. In preparatory e-mails Don Cadien had laid out some of the problems which we had with decapods, including confused and provisional species. Items to be covered during the meeting were the provisionals *Ogyrides* sp A, *Salmoneus* sp A, *Automate* sp A, and the resolution of the *Neograngon zacae/resima* nomenclatural issue.

UPCOMING MEETINGS

13 August - Lysianassoid amphipods with Don Cadien at LACSD.

September, date TBA - Holothuroids with Dr. Pawson at LACMNH.

15 October - TBD

1&2 November - (dates tentative) SAFIT/SCAMIT Hydrobid workshop at Weston Solutions; guest speaker - Dr. Hershler.

13 December (date tentative) - MorphBank presentation with Katia Sellman and Christmas Luncheon.

After our introductory business meeting Sammy began by giving us a powerpoint on Caridean shrimp worldwide. He presented the various families in the group, most of which unfortunately do not occur in our area. The breadth of morphology shown was substantial and very interesting. Most of the illustrated species and groups, however, were from the tropics. Following this we began to discuss the nature of variability within and between decapods. This was an attempt to discover if he had identified particularly stable or particularly variable character state sets that we might apply to our local species. Unfortunately he had no magic bullet characters that would always prove of value in separating related but different taxa. This was applied to the case of the local Neocrangonids, where the main separation practiced in the field has to do with the distribution of setae on the rostrum. Sammy seemed to think this was probably a valid, but not an invariate series of characters. He examined lots identified as *Neocrangon communis*, *Neocrangon zacae*, and *Neocrangon resima* and recognized the same rostral setation differences we currently use. He also suggested that there were differences he could see, but not yet quantify, in the structure of the last few abdominal segments.

Jim Roney (CLAEMD) brought specimens of *Ogyrides* sp A, as did Carol Paquette (MBC) and Don Cadien (LACSD). All were examined and found to be a single coherent species differing from *Ogyrides alphaerostris* as interpreted by Sammy. Wicksten has maintained the identity of the local specimens as *alphaerostris*, a position disputed by Jim Roney, who finds consistent differences from that taxon. Jim passed around his draft manuscript description of this new species for our examination at the meeting. This lovely animal is only found in very shallow bottoms in wave influenced situations, where it lives in temporary burrows in the breaker-zone. Sammy was very enthused about the possibility of collecting some living material for live examination and fixation for molecular analysis. No ogyridids have yet been sequenced, and our local species seemed a candidate to be the first. Unfortunately, in subsequent collecting trips with Jody Martin, no live specimens were discovered and sampled.

Examining the material of *Salmoneus* sp A brought in from Long Beach Harbor by Carol Paquette, Sammy was able to recognize the local specimens as the same as those reported by Wicksten from the Gulf of California as *S. ortmanni*. Based on the recent reevaluation of the genus by Art Anker, Sammy believes that they are not *ortmanni*, but an undescribed species native to the NEP. SCAMIT members had always assumed that this animal was introduced from the tropical Western Pacific, where a number of species occur. This is apparently not the case. The ephemeral population that occupied some portions of Long Beach Harbor prior to dying out, was probably inoculated from the south with northward flowing waters during a strong warm current (El Nino) flow.

Sammy agreed with Don Cadien's assessment of *Automate* sp A, finding the characters he used to separate it from the broadly distributed *Automate dolichognatha* appropriate and persuasive. Previous identifications of *A. dolichognatha* from the SCB were found to be based on incomplete specimens lacking some of the major characters needed for easy separation. Characters of the telson, maxilliped and scaphognathite can be used in place of the leg spination and chela characters missing in these specimens. Sammy and Don will work this animal up fully and publish it. The species continues to be taken in small numbers at a few sites off Palos Verdes, and enough material is in hand for the description.

Questions of character variability/stability/reliability kept popping up during the meeting, without eliciting any easy answers. Sammy pointed to studies of some European hippolytids that document extensive variability in a number of characters. We just have to use our instincts, and a bit of native caution, and not over-interpret unusual morphologies we encounter.

At the end of the meeting Sammy made an open request for any material of decapods from our area to flesh out the collections of the Cambridge Museum in this zoogeographic region. His primary interest remains in caridids, although other groups are also welcome. He will provide a shipping code for those who might wish to send material, but should be contacted via e-mail for instructions on how to proceed with the transfer. In thanks for his participation Cheryl Brantley put together a gift set of SCAMIT merchandise (cup, hat, shirt) which Don Cadien promptly forgot to bring to the meeting. It is awaiting a future visit from Sammy, and another meeting.

- D. Cadien

DECEMBER 2006

The December SCAMIT meeting was a combination of business and pleasure, as normally we reserve December as more of a social meeting than actual work, but this year we did a little of both. It was held at the Los Angeles County Sanitation Districts' facility. We had a general topics meeting in the morning and then sat down to a wonderful lunch financially provided for by SCAMIT, but organized and delivered by Cheryl Brantley and Larry Lovell

Since there were so many SCAMIT members present we started the morning with the "name game" where we went around the room and each of us introduced ourselves and stated which agency we worked for and our specialties. Once the introductions were complete the business portion started with Lisa Haney (LACSD) giving us an update on the impending State Sediment Quality Objectives program. If and when the new Sediment Quality Objectives go into effect it will mean more benthic infauna identification work will be needed. The program will require additional sediment sampling and analysis from major dischargers and probably for companies generating EIR's, etc. This is good and bad. It's good in that more work and job security are

always nice concepts, but bad in that the number of competent, available marine invertebrate taxonomists is dwindling.

This lead to the very next topic which was started by Rick Rowe (CSD). He brought up the idea of SCAMIT providing a certification service for marine invertebrate taxonomy. This idea has surfaced previously and has been discussed in more detail since. Rick stated that there is a need for "knowledge standards" as it were. We can share our knowledge and in doing so, raise the bar for taxonomic identification work. We are hoping that within the next year a Certification Committee will be developed by SCAMIT in order to spearhead this project. Megan Lilly has offered to discuss a cooperative program with San Diego State University as they just opened a new lab/classroom across the parking lot from the CSD marine lab. Taxonomic certification already exists in the world of fresh water taxonomists and it is time for the marine world to follow suit.

The next hot topic was whether or not SCAMIT should try to standardize the way in which provisional species names are created among various participating taxonomists. A debate arose with different people having preferred methods and their justifications for such methods. For example, some people prefer to use a provisional name which includes the taxonomist's initials, such as *Octopus* sp MBL1(since I'm typing the minutes, I get to pick the genus…). Others argued that there are too many taxonomists now between people at the different agencies and all the consultants and that unless someone was familiar with everyone's initials, this could get confusing. They argued in favor of using the agency for which one works. For example: *Octopus* CSD1 (CSD = City of San Diego). The independent consultants would simply use the initials of whatever company/agency was hiring them for the project in which the animal was sampled. However, the hitch in that plan was that many agencies, such as Weston Solutions, Inc, have multiple projects that a taxonomist will work on, and just naming an animal *Octopus* sp Weston1, doesn't give any information as to which project it came from, i.e., date, location etc. Therefore, there were those that argued that the provisional species name should contain some type of locale information, such as, *Octopus* sp Catalina1. The discussion continued around in circles, and we even came up with a combined protocol. So, for instance, if Rick Rowe, found an *Octopus* sp at Catalina Island while working for Weston, the species name would be something like: *Octopus* sp RRWestonCatalina1. Obviously that caused some laughter as the name becomes too long and cumbersome. I would like to report here that a consensus was reached, but such was not the case. For now, it was left that people will continue to name their provisional species as they see fit, with the one exception that technically, letter designations should NOT be used as they are then open to confusion with valid "scamitized" provisional species. SCAMIT provisionals are always assigned a letter designation and this is done only after the appropriate requirements have been met. At the end of the discussion, the one thing that was agreed upon was a standard **format** for provisional species names, with regards to spacing, punctuation, etc. So, a taxonomist can use whatever combination of initials and numbers she/he desires, but the format should be: genus (space) sp (no period, space) provisional designation. For example: *Octopus* sp CSD1.

Dean Pasko (CSD) suggested we hold biannual (i.e., every 2 years) "working group" meetings for each of the various taxa, with the sole purpose being to discuss proposed provisional species. Such meetings would be for presenting/discussing provisional species under consideration by local specialists. Taxa found to be truly unique after being reviewed by fellow specialists, will be given a SCAMIT provisional designation at the meeting, with the descriptive material published in the subsequent newsletter. These meetings could also be used to consider changes to existing provisional taxa subsequent to their designation, and to verify the distribution of descriptive

materials (or reissue as appropriate),etc.
And with that, we adjourned for the afternoon to enjoy lunch and each other's company.
- M. Lilly

POLYCHAETES, POLYCHAETES, IN A DISH; HOW MANY PARAPODS DO YOU WISH?

To skip ahead to the present day for just a minute... The reader will find many polychaete voucher sheets attached at the end of this newsletter. The reason being, the dealine for submitting voucher sheets for species needing/wanting inclusion in the next Taxonomic Lisiting, ed. 5, is fast approaching. Some polychaete taxonomists have taken this to heart and have been madly producing voucher sheets. For those of you asleep at the wheel, there is still time. If you submit your voucher sheets to Megan Lilly prior to August 31st, she will include them with the next NL and they will be added to the new Taxonomic Listing.

A LETTER FROM THE PRESIDENT:

Dear SCAMIT members,
First, I want to thank past President Kelvin Barwick for his leadership during his tenure as President. He did a wonderful job and will be continuing to participate as the moderator of the Google Groups account. If you have not signed up yet, I encourage you to do so. Google Groups can work as a wonderful discussion tool for our members. The Annelid Group has been the most active to date. So if you are in another Group, don't be shy or a lurker, post a question or a down-sized image of a neat animal you wish to share.
I also want to thank the other officers, Vice-President Leslie Harris, Secretary Megan Lilly, and Treasurer Cheryl Brantley for their continued support by being officers again. And thanks to Don Cadien, who will continue his fine job as the Editor of the Newsletter. As anyone familiar with small volunteer organizations knows, many of the same individuals serve such organizations year after year, and all of the above are fine examples of that service and dedication. I encourage those of you in the local area that have not yet served to take the leap, step up, and give back to the organization in the future. For those of you who reside elsewhere, I encourage you to attend meetings and participate, if you travel to the area. If you have a research talk of interest, please come present it at a meeting. Feel free to contact Vice-President Leslie Harris, who is in charge of meeting speakers. Her contact information and those of the other officers is always located at the end of each Newsletter.
I look forward to serving as your President during this upcoming year. It is shaping up to be an exciting year. We have an opportunity to interact with a new sister organization, the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT). We will be co-hosting a two-day workshop on hydrobid snails and the invasive New Zealand mud snail. The workshop will be lead by Smithsonian Curator, Dr. Robert Hershler. Watch for an announcement in the Newsletter and on the website for specific information about this meeting. It will be held at the offices of Weston Solutions, Inc. in Carlsbad, CA and is tentatively scheduled for the 1st and 2nd of November. In addition, Dr. Rich Mooi, Curator at the California Academy of Sciences will be leading July's meeting on irregular echinoids and Dr. Dave Pawson, Curator of Echinoderms at the Smithsonian, will be leading a meeting on holothurians in September. Membership is what drives SCAMIT and we want our members to be involved. If you have any questions about how you can participate or have questions about the organization, please contact me by phone at (310) 830-2400 X-5613 or via email at llovell@lacsd.org.

Sincerely,
Larry Lovell -President

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

President	Larry Lovell	(310)830-2400x5613	llovell@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Cheryl Brantley	(310)830-2400x5605	cbrantley@lacsd.org

Back issues of the newsletter are available. Prices are as follows:

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Volumes 5 - 7 (compilation)	$ 15.00
Volumes 8 - 15	$ 20.00/vol.

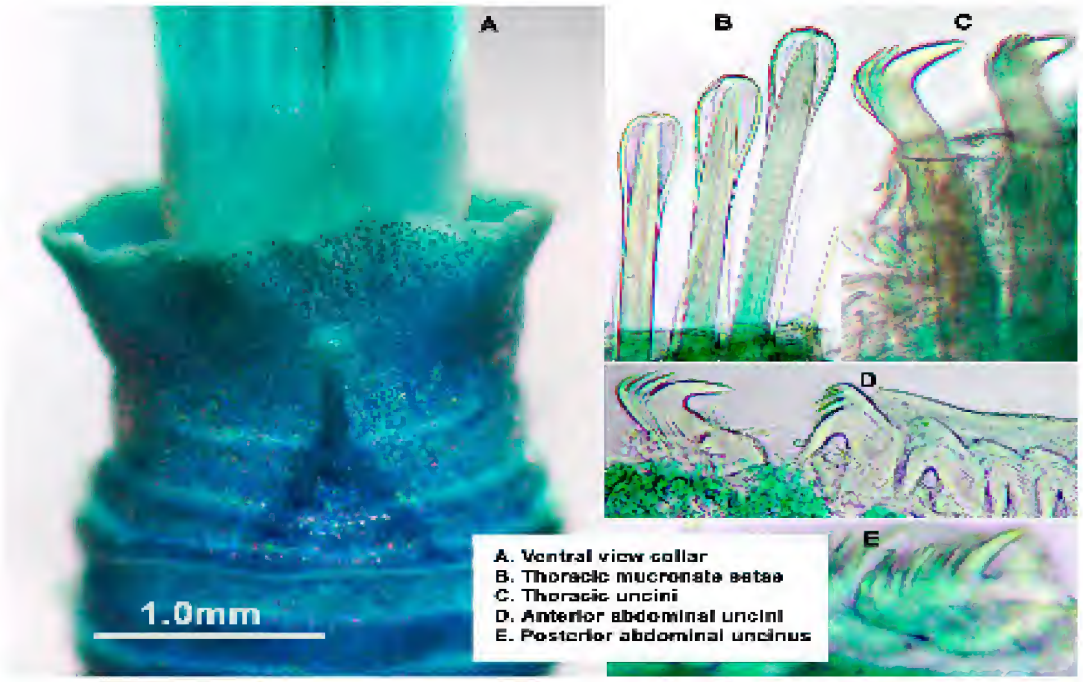
Single back issues are also available at cost.

The SCAMIT newsletter is published every two months and is distributed freely through the web site at www.scamit.org. Membership is $15 for the electronic copy available via the web site and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All new members receive a printed copy of the most current edition of "A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates … in the Southern California Bight." The current edition, the fourth, contains 2,067 species with partial synonyms. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
C/O The Natural History Museum, Invertebrate Zoology
attn: Leslie Harris
900 Exposition Boulevard
Los Angeles, California, 90007

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

January/February, 2007 SCAMIT Newsletter Vol. 25, No. 5



Chone eiffelturris Tovar-Hernandez 2007. Specimen collected of Carpinteria, CA in shallow water. Photos by Rick Rowe, CSD. (formerly *Chone* sp SD1 fide Langan 1997)

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JANUARY 2007

The January SCAMIT meeting was hosted by the City of San Diego. The topic was Miscellaneous Phyla provisional species. The meeting was intended to be a precursor to the Taxanomic Atlas, Ed 4, review meeting on Misc. Phyla. Kelvin Barwick started the day by announcing the upcoming meeting schedule for the next 6 months.

He also reminded us the Santa Barbara Museum of Natural History would no longer be able to support SCAMIT's Listserver and Kelvin was working on establishing a series of Google Groups for maintaining communication among members. Many of you should now be familiar with the Google Groups system, but if you are still having problems or questions please contact Kelvin Barwick **at**: kbarwick@sfwater.org.

As well, since many members are having some difficulties with the Google Groups, any important notices that need to be seen by the entire membership, will be sent out as an email to the membership via treasurer Cheryl Brantley. She can be contacted at: cbrantley@lacsd.org.

UPCOMING MEETINGS

15 Oct (8th is Columbus Day) - Review of Light & Smith's Manual, gastropod chapter, NHMLAC, Education Classroom on second floor. Dr. Jim McLean will join us to discuss his changes & present information about his upcoming books on the gastropods of the southern and northern NEP.

1-2 Nov - SAFIT/SCAMIT meeting on hydrobids with Dr. Robert Hershler (NMNH) followed by an executive meeting with SAFIT. The meeting will be hosted by Weston Solutions, Inc., 2433 Impala Drive, Carlsbad, CA 92010. Please contact Sheila Holt for more information: 760-795-6914.

Dec 13 - Katja Seltmann will be giving a presentation on MorphBank. The meeting will be hosted by the City of San Diego Marine Lab. Please contact Rick Rowe (CSD) for more information: rowepolyid@gmail.com

Don Cadien had the floor next and was discussing new amphipod literature. He will be writing something for a future newsletter which will deal with a newly available CD Rom which contains work on the Crustacea of Norway by Sars.

Dean Pasko, in the spirit of Miscellaneous Phyla review, suggested that Misc. Phyla workers plan to meet on an annual basis, for instance in January, to discuss current provisional species. This will keep us all on the same page and hopefully help eliminate duplication of effort which is often seen in this group.

You secretary has nothing specific with regards to any decisions made at the meeting that day, but that is probably due to the fact that no decisions were made; only discussions of problems, with no resolution at that time.

However, on a good note, Dean Pasko did a fine write up of the minutes and activities of the Oedicerotid meeting in February. Please read on for that informative review.

FEBRUARY 2007

The February 2007 meeting on Oedicerotidae was scantly attended. The group consisted of representatives from the host lab (City of San Diego), along with Lisa Haney of the LACSD. Dean Pasko, City of San Diego, presented an overview of the characters he has used to distinguish several species of *Americhelidium*, along with several keys to the SCB Oedicerotidae produced by John Byrne and Ron Velarde. In addition, a listing of the Oedicerotidae reported

from SCB was presented. This listing included several of the provisional taxa erected by members of the San Diego Lab.

An *Artificial Key to the Oedicerotidae Reported from the SCB* was distributed. This key distinguished among the major generic groups in the SCB: the *Synchelidium* complex (including *Eochelidium*, *Americhelidium*), the *Monoculodes* complex (including *Monoculodes*, *Pacificolodes*, *Hartmanodes*, *Deflexilodes*), *Bathymedon*, and *Westwoodilla*. Keys to the three major groups were then presented and discussed, and specimens and original descriptions were examined. The ensuing discussions resulted in suggested emendations to certain keys that have yet to be incorporated. The completion of these keys will be forthcoming and posted at SCAMIT's website, Taxonomic Toolbox by October 2007.

The following discussion briefly describes several of the noteworthy species clarifications that resulted. Within *Americhelidium*, specimens of *A.* "*shoemakeri*", *A. rectipalmum*, *Americhelidium* sp SD1, and *Americhelidium* sp SD4 were reviewed. Specimens of *A. micropleon* were not available, but the taxon is easily distinguished from the others by (a) the shortened uropod 3 peduncle which is only one-third of the rami length, (b) the rami of uropod 3 reaching only to the mid-point of uropod 2, and (c) the less down-turned rostrum relative to its local congeners. *A.* "*shoemakeri*" from the SCB was recognized as a complex of potentially 2–3 species possessing an oblique gnathopod 1 and gnathopod 2 that is elongate, narrow, and densely setose. Bousfield and Chevrier (1996) erected several new taxa from the NEP into which our local specimens tend to blend. Our species most closely resembles *A. shoemakeri* (Mills 1962), but cannot be confidently distinguished from *A. pectinatum* Bousfield and Chevrier (1996), *A. variabilum* Bousfield and Chevrier (1996), or *A. millsi* Bousfield and Chevrier (1996). Dean raised an issue with *A. rectipalmum* (Mills 1962) as represented by SCB agencies. The species voucher sheet presented to SCAMIT in 1984 (SCAMIT NL Vol. 3, No. 7) represented pereopod 7 has having a basis absent of even a hint of a posterior lobe (i.e., article 2 is unproduced postero-distally such that the posterior margin of the article ends at the junction with article 3). And, that is the form most often encountered in SCB samples from all agencies, male and female. However, Mills (1962) shows a distinct lobe on pereopod 7 ("P5" in figure 13 of her publication), as does Bousfield and Chevrier (1996). For now, it was decided to make no changes to the species designations, but some review of the type specimen and comparison to our local species is necessary. Finally, two CSD provisional species were dismissed, one maintained, and another confirmed at the meeting. *Americhelidium* sp SD2 and SD3 were submerged within *A.* "*shoemakeri*" as indistinguishable at this point. *Americhelidium* sp SD1 Pasko 2001 was confirmed. The species is distinguished from *A.* "*shoemakeri*" by the sparsely setose, relatively robust gnathopod 2, containing a long seta(e) emanating from the antero-distal margin of the propodus and running the length of the dactyl (Figure 1). *Americhelidium* sp SD4 Pasko 2005 was also confirmed. It too is distinguished from *A.* "*shoemakeri*" by a sparsely setose gnathopod 2, and from *Americhelidium* sp SD1 by the absence of the long distal setae on the propodus of gnathopod 2, the mostly bare propodus proper, and the presence of a pair of setae at the mid-point of the dorsal margin of the dactyl. *Americhelidium* sp SD4 closely resembles *A. rectipalmum*, as currently recognized in the SCB, but is distinguished by the nearly bare propodus of gnathopod 2 and the *presence* of a large postero-marginal lobe on pereopod 7. Of the described species, it most closely resembles *A. gurjanovae* (Kurdrjaschova and Tzvetkova 1975), as presented in Bousfield and Chevrier (1996).

Figure 1. *Americhelidium* sp SD1, gnathopod 2 showing sparse setation and long antero-distal seta of the propodus. (Photo courtesy of Ms. D. Norris, City of San Francisco.)

Among the Monoculodes group, *Hartmanodes* sp SD1 Pasko 1999 (originally described as *Monoculodes* sp SD1 Pasko 1997) was reviewed and confirmed. *Hartmanodes* sp SD1 most closely resembles *Hartmanodes hartmanae* (J.L. Barnard 1962), but is distinguished by an anteriorly produced, ventrally broadened coxa 1, broadened propodi of gnathopods 1 and 2, elongated carpus (anterior margin greater than width of the hind lobe), and a rostrum with a ventral "keel" that is concave. In contrast, *Deflexilodes* sp SD1 Pasko 1998 was determined to be *D. enigmaticus* Bousfield and Chevier 1996.

There was little trouble with the key to members of *Bathymedon*, except for a vigorous discussion of how to distinguish *Bathymedon* from *Westwoodilla*. The two taxa are poorly defined and variations in rostrum development, presence/absence of eyes, and gnathopod development within each group, make the two taxa difficult to distinguish (See Barnard and Karaman 1991).

Finally, a delay in the publication of these newsletters can sometimes have unforeseen benefits. Several months after the February meeting, the latest Edition of Light's Manual was released. In the amphipod section of that publication Dr. J. Chapman listed *Westwoodilla tone* Jansen 2002 as the local representative of the genus, instead of *W. caecula* (Bate 1857) as has been previously reported by SCAMIT member agencies. Subsequent review of Jansen's publication and specimens collected by the City of San Diego and Orange County Sanitation District have confirmed our SCB species to be in agreement with *W. tone*. This change will be reflected in the upcoming edition of SCAMIT species list.

EMENDS

In the SCAMIT NL, Vol 25 (3), some of the *Nuculana* figure legends were incomplete. Kelvin Barwick emailed the following emendations. Please make the necessary corrections in your copy of the Newsletter.

Page 4 the caption for figure 6 should read: "Figure 6 - *Nuculana penderi* LACSD: E-30, Nov., 1997 (Length ranges from 2.8 mm to 3.2 mm.)".

Page 5 figure 9 should read: "Figure 9 - *Nuculana elenensis* Sowerby syntype BMNH 1967975 (Length = 14 mm) (Image by P. Valentich-Scott)"

VOUCHER SHEETS PART DEUX

Attached are 3 polychaete voucher sheets which were submitted for inclusion in the Taxonomic Listing Edition 5. Please peruse and enjoy. They will also be posted in the Taxnomic Tools Section on our Website.

LITERATURE CITED

Barnard, J. L. and G. S. Karaman 1990. The families and genera of marine gammaridean Amphipoda (except marine gammaroids). Part 2, Records of the Australian Museum, 13 (Suppl. 13): 419-866.

Bousfield, E. L. and A. Chevrier 1996. The amphipod family Oedicerotidae on the Pacific coast of North America. Part 1. The *Monoculodes* and *Synchelidium* generic complexes: Systematics and distributional ecology. Amphipacifica, 2(2): 75-148.

Mills, E. L. 1962. Amphipod crustaceans of the Pacific coast of Canada, II. Family Oedicerotidae. National Museum of Canada, 15: 1-21.

Carlton, J.T. 2007. The Light and Smith Manual Intertidal Invertebrates from Central California to Oregon Fourth Edition, Completely Revised and Expanded, Fourth Edition. University of California Press, Pp 545-618.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

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President	Larry Lovell	(310)830-2400X5613	llovell@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Cheryl Brantley	(310)830-2400x5605	cbrantley@lacsd.org

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SCAMIT
C/O The Natural History Museum, Invertebrate Zoology
attn: Leslie Harris
900 Exposition Boulevard
Los Angeles, California, 90007

SCAMIT VOUCHER SHEET

Species name: *Levinsenia* sp. B SCAMIT, 2007 **SCAMIT Vol. 25, No. 5**
Family: Paraonidae
Prepared by: Larry Lovell, LACSD: August 31, 2007

Synonymy: *Levinsenia oculata* of authors NEP (in part), not Hartman, 1957.
Levinsenia gracilis of Blake, 1996 (in part).

Material: *Levinsenia oculata*: Holotype lot, LACM-AHF 0651, 92 specimens. Various specimens from survey work performed in southern California 1975-present.

Literature:

Blake, J. A. 1996. Paraonidae. *In* Taxonomic Atlas of the Santa Maria Basin and Western Santa Barbara Channel, Vol 6, The Annelida Part 3, Chapter 2. pp. 27-70.

Hartman, O. 1957. Orbiniidae, Apistobranchidae, Paraonidae and Longosomatidae. Allan Hancock Pacific Expeditions 15(3): 211-393, plates 20-44.

Lovell, L.L. 2002. Paraonidae (Annelida:Polychaeta) of the Andaman Sea, Thailand. Phuket Marine Biological Center Special Publication, 24: 33-56, Figs. 1-9.

Streltzov, V. A 1973. Polychaete Worms of the family Paraonidae (Polychaeta:Sedentaria) Akadamiya Nauk SSSR, Leningrad. Pp. 1-120. (In Russian). (Translated in to English for the Smithsonian Institution and the National Science Foundation by Amerind Publishing Co. Pvt. Ltd., New Delhi, India, 1979.)

Diagnostic Characters:

1. Prostomium conical with terminal sensory organ, nuchal grooves present at rear of prostomium, median antennae absent.
2. Pre-branchial segments inflated (see Fig. 1), number 6-7. 16-20 pairs of branchiae, marginally ciliated with rounded tip, first 1-2 pairs shorter.
3. Median and posterior setigers with well-developed dorsal intersegmental furrow (see Fig. 2).
4. Up to 12 modified neurosetae, beginning around setiger 31, with a double rowed arrangement further back. Superior modified setae longer and straighter transitioning to shorter more recurved setae in the inferior position. Capillary setae only present in rear row of superior position (see Fig. 3).
5. Methyl green staining pattern with lateral spot in abdominal segments (see Fig. 2).

Species name: *Levinsenia* sp. B SCAMIT, 2007 **SCAMIT Vol. 25, No. 5**
Family: Paraonidae
Prepared by: Larry Lovell, LACSD: August 31, 2007

Related Species and Character Differences:

Levinsenia gracilis (Tauber, 1879) – pre-branchial area not inflated, modified setae similar in size and shape with convex fringe, no inferior double row, no MG staining spots post-branchially.

Levinsenia kirbyae Lovell, 2002 – is very closely related to *L.* sp B, but comes from the Andaman Sea in the eastern Indian Ocean and Gulf of Thailand in the western Pacific Ocean. It also has double-rowed modified setae and MG staining spots.

Levinsenia multibranchiata (Hartman, 1957) – differs in having 28-36 branchial pairs, modified setae in single rows posteriorly, no MG staining spots post-branchially.

Levinsenia oculata (Hartman, 1957) – with pigmented prostomium, pre-branchial area not inflated, does not possess double rows of modified setae, no MG staining spots post-branchially. This species is poorly defined.

Levinsenia sp. SD1 *fide* Barwick, 2000 – differs by having 4-8 pairs of short, flattened, cupped branchiae; modified setae strongly curved with a hood, in a single row alternating with capillary setae.

Discussion:

When I began working on southern California Paraonidae in 1975 Streltzov (1973) had just published his review of the family in Russian. One illustration for *L. oculata* (Fig 58D) showed modified setae in the inferior position being more recurved and with a partial second row behind the first. Hartman's original description even mentioned a change in setal shape. Since other character states such as number and length of branchiae were more difficult to use, this setal character became the primary diagnostic character used by me in separating *L. gracilis* and *L. oculata*.

Examination of the holotype lot for *L. oculata* revealed that the double-rowed modified setae illustrated by Streltzov were not found on the type specimens examined. In spite of this problem, the use of the name *L. oculata* for specimens with the double-rowed modified setae was continued by most working in southern California, but not all. Blake (1996) reports a single specimen of *L. gracilis* thus, "The specimen from Sta. 94 has up to 10 spines per fascicle that are sometimes arranged in what appear to be two rows. In other respects it resembles *L. gracilis*." The specimen Blake references is probably *L.* sp B.

Species name: *Levinsenia* sp. B SCAMIT, 2007 **SCAMIT Vol. 25, No. 5**
Family: Paranoid
Prepared by: Larry Lovell, LACSD: August 31, 2007

Discussion: cont.

Clearly there has been confusion regarding the identity of *Levinsenia* specimens with double-rowed modified setae. Erecting a provisional name and voucher sheet for these specimens will hopefully clarify things.

Depth range: 45 – 60 m.

Distribution: Southern California.

Illustrations:

Figure 1. Anterior showing inflated pre-branchial area.

Figure 2. Whole body showing M.G. staining and dorsal intersegmental furrow.

Figure 3. Double-rowed modified neurosetae.

ver. RCR070628 (RRowe)

Paranaitis sp SD1 fide Velarde 1998

ABC labs Goleta B1-3 6Oct05 27.5 m specimen in RCRpersColl

Specimens have been collected by the City of San Diego at moderately shallow depths (the old outfall survey depths of approximately 100 meters)

1. Pure white
2. Large, broad, terminally rounded dorsal and ventral cirri
3. Nuchal papilla is either absent or so reduced that it is not revealed even with alcian blue staining.
4. Tentacular cirri are short, basally broad, and with drawn out tips.
5. Tentacular formula is (0 1/0 + 0 01/1) + S 1/V There are definitely no setae or a setal lobe on the 2nd tentacular segment.
6. Single pair of large brown eyes.
7. The dorsal cirri overlay the dorsum and parapodia similar to the elytra of a scaleworm but with over half of the dorsum exposed.
8. Alcian blue stain reveals thin, short, white, radiating subdermal structures along the border of the dorsal cirri. (at least in the Goleta specimen)
9. Very large single tooth at terminus of compound setae shafts.

9 June 04
C. Brantley

Trichobranchidae sp. LA1

Material examined:

Bight '03 Station 4001 792m depth 6 specimens
Bight '03 Station 4392 610m depth 1 specimen

Diagnostic characters:

4 prs. of branchiae (8 total) all pectinate with cirriform tip arranged as illustrated below with 4 across and then 2 pr. centered below those and another 2 pr. centered below those.

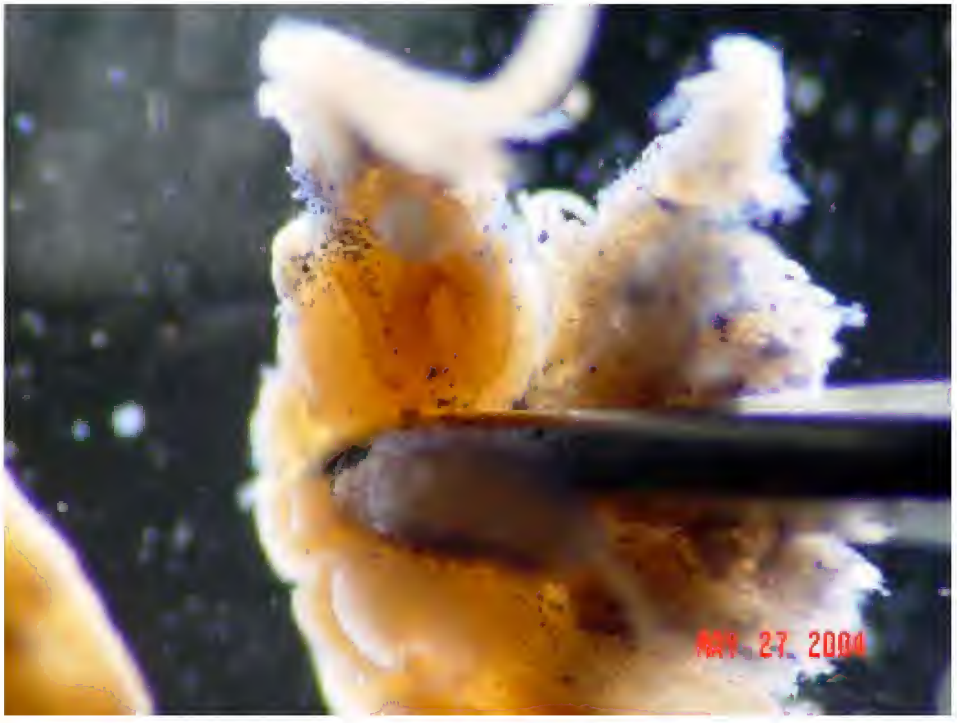
17 thoracic setigers

Uncini start on setiger 6 and are long shafted hooks with the main fang surmounted by crest of smaller teeth

Notosetae smooth and straight with long tips slightly bent- limbate capillaries

No lateral lappets but the 1st 4 setigers are somewhat inflated

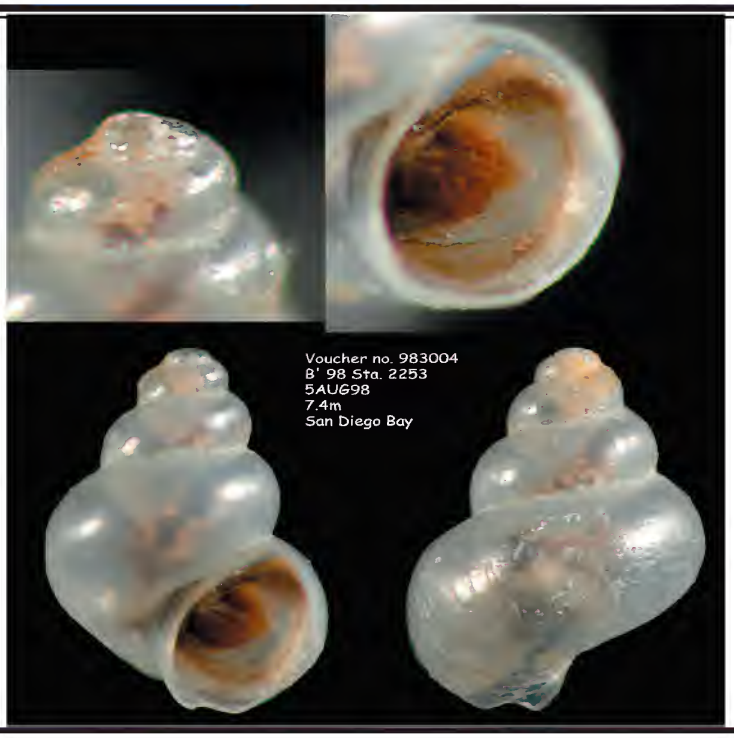
Unusual looped or sinous shaped gland on back of prostomium underneath branchia



Unusual looped gland
(Just above forceps)

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

March/April, 2007 SCAMIT Newsletter Vol. 25, No. 6



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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

MARCH 12, 2007

The meeting was held at the Los Angeles County Sanitation District (LACSD) marine biology lab. President Kelvin Barwick started off by announcing upcoming SCAMIT meetings. The next several meetings will deal with reviewing taxa for Edition 5 of the SCAMIT Species List. On March 26th at the San Diego lab, mollusca and echinoderms will be reviewed. On April 9th at LACSD, crustacea will be reviewed. On April 23rd in San Diego, miscellaneous phyla will be reviewed. It was determined at the end of the present meeting that we will need another day to work on polychaetes, so the date of May 7th was chosen. This meeting will be held at LACMNH. Another meeting, on May 21st in San Diego, will be used to follow-up on non-polychaete groups.

UPCOMING MEETINGS

1-2 Nov - SAFIT/SCAMIT meeting on hydrobids with Dr. Robert Hershler (NMNH) followed by an executive meeting with SAFIT. The meeting will be hosted by Weston Solutions, Inc., 2433 Impala Drive, Carlsbad, CA 92010. Please contact Sheila Holt for more information: 760-795-6914.

Dec 13 - Katja Seltmann will be giving a presentation on MorphBank. The meeting will be hosted by the City of San Diego Marine Lab. Please contact Rick Rowe (CSD) for more information: rowepolyid@gmail.com

Cheryl Brantley had some information regarding the Southwest Association of Freshwater Invertebrate Taxonomists (SAFIT). Cheryl had been conducting e-mail correspondence with the organization, and they are interested in patterning their organization after SCAMIT. They have already based some of their work after SCAMIT. In addition, some of their members are SCAMIT members. It was suggested that both organizations have a joint meeting where we could meet and exchange information and ideas. Cheryl offered to post some information about SAFIT on SCAMIT's new Google website. Larry Lovell has also spoken to SAFIT about their organization. They are receiving some funding from the State Water Board. SCAMIT may want to consider having a link on the State Water Board site also.

Kelvin then explained the process of joining the Google SCAMIT site and encouraged members to accept their invitations that were e-mailed to them. He listed some of the features of this site, and there was a discussion on the issue of copyright of images that would potentially be posted there. Rick Rowe has already developed an annelid publication site on the Google site for members to post new annelid citations.

Next Ron Velarde announced an upcoming conference: The Channel Island Symposium will be held in February 2008 in Oxnard, California.

Larry brought to our attention an article by SCAMIT members Kelvin Barwick and Tim Stebbins in the March 8, 2007 issue of *The Festivus* titled "Observations of brooding in two species of *Saxicavella* Fischer, 1978 (Bivalvia, Hiatellidae, Saxicavellinae) from southern California."

Larry passed along some information about the Bight '03 provisional species list from his communications with Ananda Ranasinghe from SCCWRP. Ananda has been in communication with Kathy Welsh from WEMAP, and she is in the process of incorporating our provisionals into their database. We have been requested to gather our documentation on our provisional species to pass on to Kathy. Cheryl offered to send out a list of Bight '03 provisionals so we each can see what documentation we are responsible for. Ananda requested that provisional species

documentation for the next Bight project be posted on the SCAMIT website and/or newsletter right away, when the animals are first encountered.

Recently, Don Cadien was contacted by Ann Dalkey regarding a fund to support young taxonomists at Cal State Long Beach. The fund will be in honor of Don Reish. Attendees agreed this is a worthwhile idea, and the officers will need to discuss what SCAMIT's involvement will be.

Don Cadien announced there is a new employee in their lab at LACSD named Chase McDonald. He transferred from another lab and will be trained to take over Shelly Walther's work. In addition to other duties, he'll be trained in the taxonomy of cnidaria and nemertea.

Don proceeded to discuss some views and ideas he has for the 5th edition of the SCAMIT Species List. One of the files sent out before the meeting included his modified hierarchy, on which he would like feedback. Don consulted the book "Assembling the Tree of Life" in constructing the new hierarchy, as well as a series of cladistic analyses based on both morphological and molecular data.

Additional comments from Don regarding the 5th edition are as follows: Each edition covers new ground. We are expanding the range to 2-1000m due to the inclusion of the Bight '03 data. The coverage area is still within the Southern California Bight. We will again include data from the Channel Islands in this edition. Agencies are now required to engage in special research studies such as the 0.3mm screen size study at the City of San Diego. Don feels these results should also be included. He distributed some files via e-mail and asked people to look them over and send their comments to him. The question was asked: should consulting work (e.g. non-monitoring work) data be included in the list, if it meets the criteria of being within the geographical area and depth range of 2-1000m? Standardization is the most important consideration. Documentation on newly reported species and provisional species would have to be appropriately distributed to other taxonomists in the form of voucher sheets, etc. There is no general consideration which would exclude such non-monitoring taxa. After some discussion it was agreed that inclusion of materials from non-POTW monitoring or regional monitoring efforts would be of value, and should be allowed. We will expand the allowable sources covered in the introduction to Edition 5 to permit inclusion of such non-monitoring records. Prior to addition of such taxa, however, two criteria must be met: 1) the records must come from within the bathymetric and geographical coverage boundaries, and 2) a SCAMIT member taxonomist or SCAMIT associated taxonomist must generate or review the identification. Literature based additions are not supported; either actual specimens or photographs of actual specimens must be examined to verify the identity prior to inclusion.

The next question was "would tables or keys be sufficient documentation to include new species from non-monitoring work?" It was agreed that a species must be recorded to be included, so species that perhaps were just discussed at SCAMIT meetings would not be included. In the case of recording a described species that has not been encountered before, Don suggested writing a "newly encountered species note" for the newsletter. Images and literature should be included where available. The information must be distributed to other taxonomists. The person who finds the specimen is responsible for submitting a note to the newsletter, or taking other steps to ensure others in the region will be able to recognize the taxon, and use the name recorded in a standardized fashion.

Provisional species can be included in Edition 5 only if documentation has been distributed to

other taxonomists. The documentation can be in the form of a voucher sheet, identification sheet, or character table. The species does not have to be "SCAMITized" in order to be included in Edition 5, but it MUST be regionally standardized in some fashion, with sufficient information distributed to allow it to be distinguished from other species known from the region.

Don made a case for including sub-families in the hierarchy for Edition 5. Those present at the meeting agreed.

Leslie commented that she would like to see a "regional clearing house" where we could share taxonomic information. It was quickly suggested to try this idea on the new Google SCAMIT website. A table format would most easily lend itself to the information we would like to include such as person, location, species names, date, and the most important taxonomic characters. We discussed some ideas of how the table format would work and it was agreed that we should give it a try. Leslie volunteered to share some of her Excel tables and put them on the website.

We then started our main work for the day, reviewing polychaetes for Edition 5. We addressed each species, line by line, of Larry's list which he had e-mailed to us previously. We made very good progress but needed to schedule another meeting to finish the job. This meeting is scheduled for May 7th at LACM in Leslie's trailer.
- K. Langan, CSD

26 MARCH 2007

The Echinoderm/Mollusk portion of the Ed 5 review meetings was held at the City of San Diego Lab. It was at this meeting that Kelvin Barwick, our then President and fearless leader, announced he was leaving the City of San Diego for a job with the City of San Francisco. Due to his more northern location, he felt it was best if he stepped down as SCAMIT President. He nominated member Larry Lovell for this position on the ballot and was "seconded" by Don Cadien.

It was brought to our attention that member Christina Thomas (OCSD) had published an article in The Festivus titled, "A Trawl-Caught Pen Shell, *Atrina oldroydi* Dall, 1901, Collected by the Orange County Sanitation District". Please see the March 8, 2007 issue of The Fesitvus.

Don Cadien then made introductory remarks regarding Ed 5 of the Taxonomic Lisitng. His remarks were very similar to the ones outlined above in the minutes from the March 12th meeting. He is trying to keep all of us on the same page with regards to changes we can expect to see. With that we moved onto reviewing the echinoderm and mollusk species listed in Ed 4 and discussed any changes or additions that needed to be made for Ed. 5. I will not repeat all of them here, line by line, suffice it to say, there will be some changes when the new edition is published.

23 APRIL 2007

The second April meeting was the Miscellaneous Phyla Review in the Edition 4 Emends series. The meeting was opened by Kelvin Barwick who had a few announcements. He reviewed upcoming meetings and then proceeded to remind us that many items on the SCAMIT website are now password protected so that only members in good standing can access the most recent volume of newsletters and the most recent edition of the Taxonomic Listing. He also again reviewed the concept and function of the SCAMIT Google Groups.

Tony Phillips (CLAEMD) announced that he was having a problem identifying what might potentially be *Potamopyrgus antipodarum*, the New Zealand mud snail, in some of his consulting

samples. He worries that this snail and the local *Tryonia* could potentially be confused. This problem will be brought to Dr. Hershler at the 2 day workshop with SAFIT in November of this year.

Speaking of problematic mollusk identifications and *Tryonia*… Kelvin Barwick showed a slide of an animal identified as *Rissoella* sp for the moment. However, he was concerned that it could possibly be *Tryonia* which is a native, brackish water species. This animal has very specific and restrictive habitat requirements and currently habitat loss is a concern for this species. Therefore, it is important that it be properly identified when encountered. No one at the meeting felt comfortable identifying the animal on the slide. It was decided the specimen should be shown to Dr. Hershler. Kelvin has subsequently sent the specimen to Dr. Hershler who confirmed the ID as *Tryonia imitator* (Pilsbry, 1899). Please see the cover photo to view this specimen.

After that we started our review of the Miscellaneous Phyla species listed in Ed. 4 of the Taxonomic Listing. We were not able to finish in one day and it was decided that we could finish up any loose ends at the May 21 meeting.

MARINE INVERTEBRATES CLASS

Would you please announce to the SCAMIT members and also put it in the next newsletter that Tom Gerlinger and I will be teaching identification of marine invertebrates spring 2008 semester on Saturdays (7hrs). The class is being offered through Ocean Studies and also through CSULB extension. Students who are currently attending any of the state universities in SoCA will enroll through ocean Studies; other students will enroll through CSULB extension. An interested person can contact me via email (DJReish@aol.com) or by phone (562) 431-7064.
Thanks,
Don Reish

JOB ANNOUNCEMENT

Principal Scientist Job Announcement for Clean Ocean Action

The principal scientist is the primary science expert on marine pollution issues for Clean Ocean Action (COA), a non-profit marine advocacy coalition. The Principal Scientist works closely with COA's Executive Director, attorneys, and policy directors. The Principle Scientist will oversee the scientific aspects of COA's programs. For information about COA, please visit www.CleanOceanAction.org.

Primary Responsibilities: in consultation with COA's Executive Director,
- help shape regional and national ocean protection policies
- plan the direction of the science programs
- investigate and evaluate proposals, regulations, projects, and issues, and prepare comments to reduce pollution sources
- track and assess scientific and technical aspects of water quality policies and pollution permits at regional and state levels to reduce pollution impacts
- prepare policy/technical reports and comments on water quality issues
- advocate through both written comments and oral testimony for sound science and strong regulatory policy before regulatory agencies
- communicate and coordinate technical and policy issues with a diversity of people including

policy, legal, coalition members, media, students, and citizens
- develop, organize, and facilitate workshops and meetings as needed
- represent COA at local, regional, and national levels and attend scientific meetings
- write position papers, press communications, and scientific content for website, newsletters, and public outreach materials
- cultivate relationships with scientists and policy experts at non-governmental organizations, regulatory agencies, and educational institutions to review topics and develop positions
- train and advise interns in marine science/public policy.

In addition when necessary:
- Conduct public presentations on issues
- Write newsletter articles and keep website updated on science related matters
- Provide citizens with information
- Assist in outreach on water quality topics
- Assist with grants proposals
- Time allowing, publishing in technical journals and presenting at conferences are encouraged

Position Qualifications:
- Advanced degree in marine biology, environmental chemistry, toxicology, or related environmental sciences field (post-doctorate preferred)
- Strong technical and scientific background in water quality
- Excellent interpersonal communication, public speaking, and writing skills
- Good judgment and ability to successfully manage multiple deadlines
- Strong decision-making experience with interest in taking a leadership role in a collaborative, visionary, and highly effective organization. Advocacy experience a plus
- Commitment to science, precautionary principle, and facts a must
- Flexibility and good sense of humor with a passion for Clean Ocean Action's mission to protect the marine environment

SALARY: Very competitive salary with 100% employer paid health and dental insurance in addition to other employee benefits.

WORK ENVIRONMENT: Clean Ocean Action (COA) is based at Sandy Hook, NJ, a national recreation area; a beautiful largely undeveloped coastal ecosystem including wetlands, forest, and 15 miles of beaches; located within 15 miles of Manhattan. COA is a team of ten dedicated ocean advocates who work together in a century old building. The pace is hectic, the work rewarding, and the results priceless.

DEADLINE TO APPLY: December 1, 2007 or until position is filled.

HOW TO APPLY: Submit a cover letter, resume, short writing sample, at least three references with affiliations and contact info, and salary expectations, by email to business@cleanoceanaction.org. E-mail inquiries only, please.

VOUCHER SHEET

Polychaete enthusiasts, please see Rick Rowe's voucher sheet on *Clymenella* sp SD 1. It is attached at the end of this newsletter.

BIBLIOGRAPHY

Barwick, Kelvin and Timothy Stebbins. 2007. Observations of brooding in two species of *Saxicavella* Fischer, 1978 (Bivalvia, Hiatellidae, Saxicavellinae) from southern California. The Festivus Vol. 39(3): 25-27.

Cracraft, Joel and Michael J. Donoghue. 2004. Assembling the Tree of Life. Oxford University Press, Inc. New York, New York. 576 pages.

Thomas, Christina. 2007. A Trawl-Caught Pen Shell, *Atrina oldroydi* Dall, 1901, Collected by the Orange County Sanitation District. The Festivus Vol. 39(3): 29-30.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

President	Larry Lovell	(310)830-2400X5613	llovell@lacsd.org
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Cheryl Brantley	(310)830-2400x5605	cbrantley@lacsd.org

Hard copy back issues of the newsletter are available. Prices are as follows:

Volumes 1 - 4 (compilation)	$ 30.00
Volumes 5 - 7 (compilation)	$ 15.00
Volumes 8 - 15	$ 20.00/vol.

Single back issues are also available at cost.

The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $15 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All new members receive a printed copy of the most current edition of "A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates … in the Southern California Bight." The current edition, the fourth, contains 2,067 species with partial synonyms. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT
C/O The Natural History Museum, Invertebrate Zoology
attn: Leslie Harris
900 Exposition Boulevard
Los Angeles, California, 90007

City of San Diego
Provisional Species Voucher Sheet

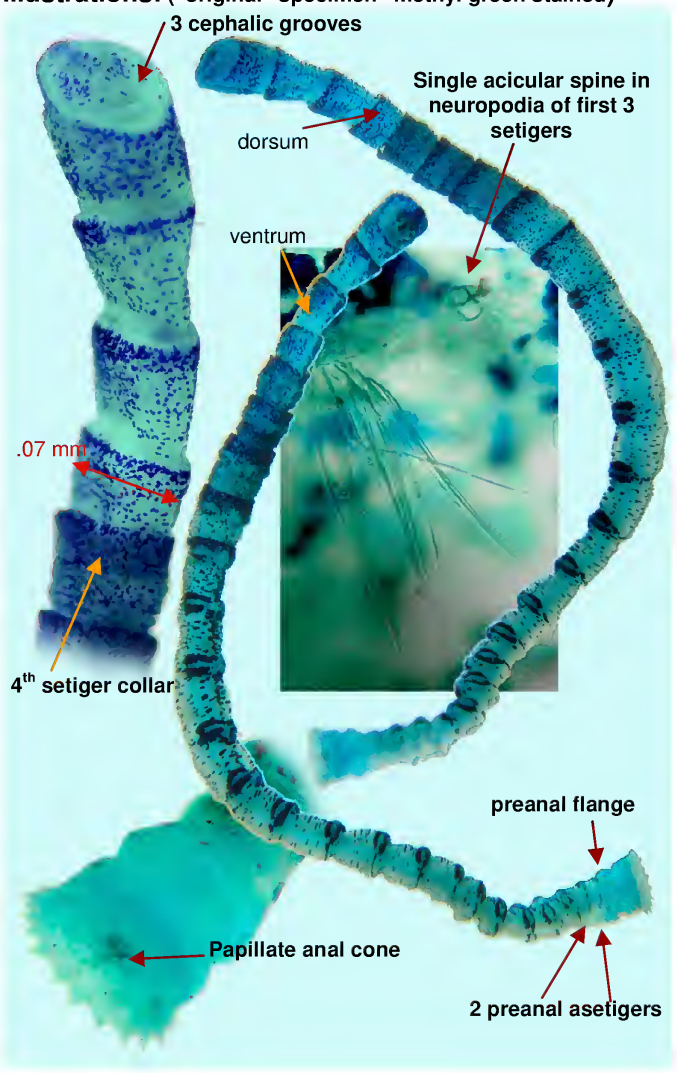
Provisional Name: ***Clymenella* sp SD1** Taxon: **Maldanidae** Taxonomist: **R. Rowe**
Authority: **fide Rowe 2006** Common Synonyms: Date: **28 March 2006**

Specimen(s):	AGENCY	SURVEY	STATION	DATE	DEPTH	STORAGE VIAL #
"Original specimen"	City of San Diego	SBOO	I-21_r2	060206	41m	RCRpersColl 2161

Characters: (based on single entire "original specimen" / ~22 mm total length and 0.7mm max. width at ant of 4th setiger)

- Cephalic plaque/ 22 setigers +2 preanal asetigers + prepygidial flange / anal plaque
- Three transverse cephalic grooves / first straight and across 2/3rds of cephalic plaque width / second curved and reaching across nearly entire cephalic width / third curved and along dorsoposterior cephalic plaque margin
- Very low cephalic marginal flange with rounded posterior margin and no lateral or posterior incisions
- Palpode broadly rounded and only slightly protruding beyond the edge of the cephalic rim
- Nuchal grooves linear and along lateral margins of palpode / most widely separated at the rim / extend through approximately 1/3rd the length of the cephalic plaque
- Well formed collar on the anterior of setiger 4 (not simply a contracted telescoped fold)
- Each fascicle of the first three setigers with single acicular neuropodial spine accompanying 8-10 notopodial bilimbate capillaries
- The acicular spines have a reduced rostrate terminus – see comments*
- Pygidial plaque with approx. 20 triangular marginal papillae (all subequal in length)
- Anal cone central and covered with many small papillae
- Note the speckled and banding pattern produced by methyl green stain on the various views of the single, "original specimen" illustrated to the right

Illustrations: (**"original" specimen" methyl green stained**)



Related Species & Other Comments:

Clymenella californica Blake & Kudenov 1974- **has no transverse cephalic grooves, relatively high marginal cephalic flange which tapers posteriorly, and a single, preanal asetiger. (Taxon described from Tomales Bay, California, but not included on SCAMITed4)**

Clymenella complanata Hartman 1969- has a single transverse cephalic groove, low to no marginal cephalic flange which is rounded posteriorly, and 3 preanal asetigers + preanal flange (Taxon included on the SCAMITed4 list)

***Clymenella* sp A** fide Harris 1985- has 2 transverse cephalic grooves, very low marginal cephalic flange which is rounded posteriorly, and 2 preanal asetigers + preanal flange (Taxon included on the SCAMITed4 list)

In 1985 Leslie Harris issued comments about the doubtful generic placement of ***C. complanata*** and ***C.* sp A** (they may belong in *Isocirrus*) and distributed a character table for California reported species of ***Clymenella*** and ***Isocirrus***.

*Spines are considered acicular in Maldanidae when the rostrate terminal structure is less developed (fewer dentitions) than neurosetae on median and posterior thoracic setigers. Often juvenile specimens in some genera will have reduced rostrate spines while the adults have unornamented simple aciculae on anterior setigers. The reduced rostrate spines can possess a beard, the large primary tooth, and some smaller terminal secondary teeth and still be considered acicular. Reduced rostrate spines are present in the "original specimen" of *Clymenella*

References:

Harris, L. 1985. "*Clymenella*" sp A (comments and character table). SCAMIT Newsletter vol. 16 no. 8.

Blake, J. A. & J. D. Kudenov. 1974. A new species of *Clymenella* from Tomales Bay, California. Bull. So. Calif. Acad. Sci. vol. 73 (pp. 48-50),

SCAMIT Treasury Summary
2006 – 2007

The treasurer's report is overdue and I apologize. I always like to keep members informed of just where their membership dues go and this report should have been produced a few months ago. However, the figures below represent our current balances as of 9/19/2007 and our expenses to date since our newsletter is a little behind. SCAMIT is still spending almost twice as much for printing and mailing newsletters to hardcopy members as electronic members. We greatly appreciate the extra membership dues our hardcopy members pay to help us make up that difference. SCAMIT also awarded a publication grant this year and gave a few travel stipends to guest lecturers. We also spent a little to treat members to a holiday luncheon, which we are planning again for this December.

Account Balances (as of 9/19/07)

Checking	$ 4,086.11
Certificate of Deposit	$12,625.01
Cash	$ 26.77
Total	**$16,737.89**

Income

2007 Membership dues	$ 2,069.65
Interest from CD	$ 441.65
Total	**$2,511.30**

Expenses

Electronic newsletter (website/domain name)	$ 310.39
Hardcopy newsletter (printing/postage)	$ 603.82
Publication grant	$3,000.00
Travel stipends	$ 350.80
Holiday luncheon	$ 309.23
Total	**$4,574.24**